THE BUILDER

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NEWS SUMMARY

THE RIBA COMMITTEE on the representation of members in salaried employments has issued, through its chairman, an interim statement. p. 773

A REPORT on the problems of the delivery and storage of solid fuel in flats is reviewed by Mr. Kenyon. p. 775

THE RIBA have issued the programme of their forthcoming Symposium on 'Family Life in High Density Housing.' p. 775

QUANTITY SURVEYOR MEMBERS of the RICS have discussed the subject of Elemental Bills. p. 776

CONSTRUCTIONAL METHODS are blamed by the Fire Protection Association for many large outbreaks of fire in factories. p. 779

THE REGISTER of Restrictive Trading Agreements is now open for inspection in London, Edinburgh and Belfast. p. 787

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PROGRESS REPORT

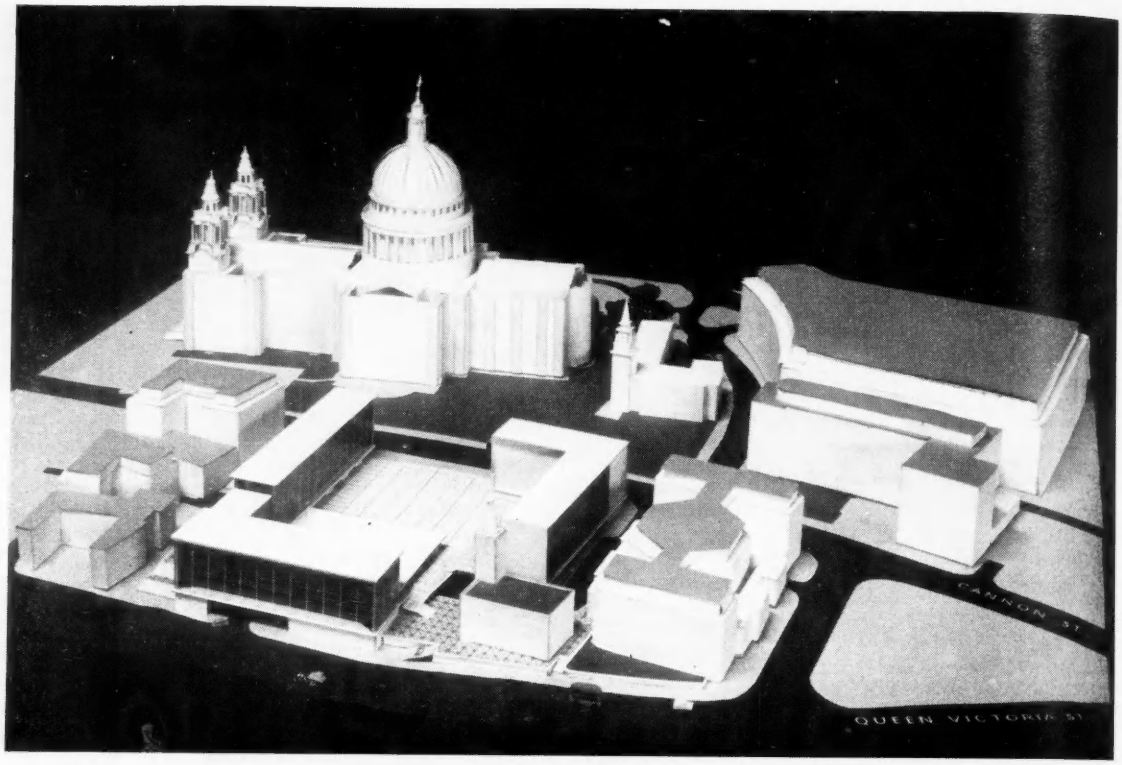
ALMOST upon us is the second anniversary of that heretic Annual General Meeting of the RIBA when a record attendance 'deplored the Council's indifference' to the current clamour for adequate representation of salaried architects in wage negotiations, and instructed it to bring forward fresh proposals to satisfy the demand for a trade union backed by the Royal Institute. The occasion is heralded by issue of a statement (see page 773) by Mr. Richard Sheppard as chairman of the committee which was appointed, as a direct result of the critical resolution, to examine the representation of salaried architects and to review the structure of the profession. Over a year ago the Committee reported itself unable to proceed constructively on the first part of its work until it had completed the second part which it defined as a task quite beyond the scope of a committee; additional permanent high-grade technical staff at the RIBA was prescribed as essential if conclusions of any value were to be drawn and incontrovertible facts and figures were to be available.

The interim period has seen the virtual cessation of the clamour, in spite of the effect of the credit squeeze on employment. It has also seen the appointment of Mr. Gordon Ricketts as Secretary (full blown, not Deputy nor Assistant) for Professional Relations and the fortuitous start of the extensions to 66, Portland-place. The Committee meanwhile have not been idle and, anticipating Mr. Ricketts' appointment, made investigations of five architectural offices all producing a 'good standard of work' and known by at least one member of the investigating team. Mr. Sheppard tells us that the investigations were started with an open mind and that the committee were aware that the results might be valueless. Nonetheless, he reports the discoveries made and presages a programme, a long and expensive one, for Mr. Ricketts and his staff; he warns us, however, that even this may not 'yield more than tentative conclusions' which 'might well point to interesting lines of further inquiry.'

The severely-limited investigations made by the Committee have achieved one result which is not so cautiously presented—'quite substantial' evidence points 'pretty clearly' to the fact that it is both efficient and economical to place the responsibility for a job with one man who has the power to direct the subordinate staff placed under him and to control the contract! The Committee admit to being on the brink of the revelation that the legal liabilities of official architects differ from those of their brothers in private practice. And a point that has caught their attention is that the proportion of qualified staff in official architects' departments is higher than that in other departments.

We have had some doubts as to the value of the task set the Sheppard Committee, and of the wisdom of the creation of a new secretariat at the RIBA, particularly in relation to their main function which, it will be remembered, was to do something for those allegedly underpaid salaried architects. But if they are going to present common knowledge and horse sense to the Council and the profession at large, and if this is going to be understood and acted upon, then the ridiculously roundabout and expensive set-up may justify itself.

In a few years it may be acknowledged officially that qualifications should be reserved for the potential architect and that it has in the post-war years been too easily attained and too liberally distributed; that standards have been lowered by the extension of recognition to infrequently-inspected schools and that, by giving the principal of each recognised school a seat on the Board of Architectural Education, entry to the profession is now virtually controlled by men with vested interests in prolonged full-time courses (though this is not to say that their contribution is negligible); that, by refusing the slightest concession to graduates of any University faculty other than architecture, the Board has robbed the profession of many intelligent recruits. It may even be acknowleged that large offices can be too large, small offices too many, that 6 per cent. can be poor recompense for a job well done. Even that good architects need no trade union and that substandard ones and draughtsmen do not deserve one backed by a Royal Institute.



REVISED LAYOUT FOR ST. PAUL'S AREA.—The model shows the revised layout of part of the area surrounding St. Paul's Cathedral. The revision, undertaken at the suggestion of the LCC, is understood to have the approval of Sir William Holford; it involves a less closely built-up frontage to Cannon-street. (*See note*)

Notes of the Week

St. Paul's Precinct

AS we recorded in last week's issue, the LCC has approved certain modifications in Sir William Holford's scheme for the redevelopment of St. Paul's Precinct. The changes relate to (1) the disposition and treatment of buildings on the south side of Cannon-street, and (2) the widening and extension of Carter-lane to Ludgate-hill. Only the former changes are shown in the photograph of the model (reproduced on this page), which may be usefully compared with the general view of the original model given on page 292 of our issue for April 13, 1956. From this it will be seen that the 'mouth' of the large open space on the south side of Cannon-street facing the even larger open area to the south-east of the Cathedral has been considerably narrowed, a definite improvement visually.

The model now given does not show the more controversial features of Sir William's original scheme, namely, the enclosure of the forecourt of the Cathedral with an irregular arrangement of disparate buildings, mainly of commercial character, and the proposed 22-storey building north of but close to the west front. No decisions appear to have been taken on either of these, and it is not possible to judge whether the former is likely to be affected by the widening of Carter-lane and its extension to a lower level of Ludgate-hill. One may still hope, presumably, that both features may be modified or, better still, abandoned.

Commonwealth 'Passport' Exams

FIRST FRUITS of the tour of Australia recently undertaken by the President and Secretary of the RIBA, now on their way to Canada and the US, is seen in the announcement by the Australian Institute of Architects that a Conference to consider the establishment of equal architectural standards throughout the British Commonwealth is to be held at Brisbane in Queensland in August. The conference is to be attended by Professors of Australian Architectural Schools and by architects from all the States who are to study a syllabus for a basic examination put forward by the RIBA.

The Secretary of the Australian Institute, Mr. Craig, is reported as saying that the long-term objective is to facilitate the interchange of architects among various countries. The proposed basic examination would be followed by examinations on local conditions. According to Mr. Craig about five British architects each week make inquiries about obtaining work in Australia.

The speed with which the decision to hold the conference follows the President's visit is a significant indication of the impact with which the ideas taken to Australia have made their mark.

Hesketh Hubbard

THE death of Hesketh Hubbard on April 16 deprives the architectural world of one of its best known modern delineators. Artist, writer and teacher, Hubbard will perhaps be best remembered for his work, through the Forest Press, in making available to the world coloured woodcuts, and for his oil paintings of architectural subjects, for which he had a special sensitivity. Though never made a Royal Academician, many other honours were paid him, including presidency of the ROI, the RBA Art Club and the Royal British Colonial Society of Artists, and he was past-Master of the Art Workers' Guild.

Royal Society of Sculptors

THE annual report of the Royal Society of British Sculptors contains many features of interest, including an appreciation of Charles Wheeler, the new PRA, by Sir Edward Maufe; an abridged illustrated version of Mr. Rupert Gunnis's Reynolds-Stephens Memorial Lecture on 'British Open-Air Sculpture'; an article with portrait on 'The Influence of Jules Dalou at the College of Art' by Gilbert Ledward; an illustrated article on 'The Early Royal Funeral Effigies in Westminster Abbey' by R. P. Howgrave-Graham; a photographic illustration of William McMillan's statue of King George VI in the Mall ('Annual Best Work of the Year'), and much else besides. Incidentally, Mr. Ledward reminds us that this year is the centenary of the birth of Alfred Drury, RA. One illustration of special interest in Mr. Gunnis's lecture is an old photograph of Hyde Park Corner, showing the Wellington Arch, Constitution-hill, as it was originally built in axial

relationship with the Screen entrance to Hyde Park, and with Wyatt's equestrian statue of Wellington on top, a much derided work which was removed to Aldershot in 1883.

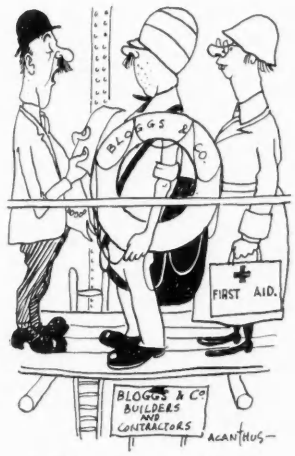
New Birmingham Guide

A NEW Guide Book to Birmingham has just been issued by the city's information Department in good time for the influx of visitors expected for the British Industries Fair in May. An introductory chapter traces the story of the growth of Birmingham from the obscure manorial hamlet of Norman times to its present position of Britain's second city, and following chapters deal with civic management, cultural amenities, entertainment, and sport, industry and a concluding chapter on the surrounding countryside. There is a useful section of general information and a street plan.

Some 25 carefully chosen illustrations add to the publication, among which is one of the Town Hall, a building in the classical tradition which was designed by Joseph Aloysius Hansom, founder and editor of *The Builder* and was opened in 1834. Copies may be obtained from the City of Birmingham Information Department, The Council House, Birmingham, 3, price 1s.

Booklets About Building

CONDITIONAL AID FUNDS from the US have made possible publication of a series of booklets offering to building designers reviews of some modern techniques and materials which merit wider use. The first three are now published by MoW: Simplified Plumbing; Polythene Tubes for Cold Water Services; and The Importance of Thermal Insulation in Buildings. These booklets are excellent outline guides to their subjects and should be most useful to architects and technicians for whom they are intended. HMSO, 6d. each.



'Crash helmet, life-belt, parachute, Nanny—I wonder if I should chain 'im to the scaffolding?'

The LMBA Conference on Accident Prevention opens at the Royal Empire Society on May 3.

CORRESPONDENCE

American Quantity Surveyors

To the Editor of *The Builder*

SIR,—My attention has been drawn to the editorial in your November 2 issue in which you refer to an article written by Mr. G. Szmak, Executive Secretary of the Construction Surveyors Institute. You appear to assume that the CSI is the American equivalent of the Royal Institution of Chartered Surveyors. The RICS surely caters for surveyors concerned generally with real estate, and to link them with the CSI will tend to mislead your readers.

The CSI was founded in 1926 with the title of American Institute of Quantity Surveyors. The title was changed in 1946 to the Construction Surveyors' Institute as 'Construction Surveyor' was considered to be a more widely used term than 'Quantity Surveyor,' also the use of American in the title gave the false impression that membership is confined to Americans. From its inception the CSI have allowed estimators or quantity surveyors employed by building contractors to become members of the Institute, while at the same time encouraging the adoption of bills of quantities, or purchase requisitions as they are called, prepared by private firms of surveyors.

You will therefore appreciate that the CSI, like the Institute of Quantity Surveyors, caters only for those who perform the function of quantity surveyor and does not discriminate between those employed by commercial firms and those in private practice.

D. J. JORDAN.

c/o The State Engineer, PO Box 38, Doha-Qatar, Persian Gulf.

∴We would assure our correspondent that we are under no such impression as he suggests in his first paragraph. Our actual words were: 'The American Construction Institution . . . is apparently the opposite number, *in many respects*, of our Royal Institution of Chartered Surveyors.' We are glad, however, to publish his letter.—ED.

A Matter of Inspection

To the Editor of *The Builder*

SIR,—Further to my letter published in your issue of April 19, I cannot protest too strongly against the action of *The Builder* in publishing, on April 5, a letter signed 'S. Crux.'

When I wrote my letter, no one of the name of Crux had lodged any complaint with this Council. The publication of his letter, however, brought the builder in touch with this Council. The house was in fact built by a registered house-builder, was inspected on ten different occasions during construction, and was certified on completion as complying with this Council's standards.

At the builder's request our surveyor has visited the house and reports that, apart from one or two small shrinkages and other matters normally put right as part of a builder's after-sales service, the house is well up to this Council's requirements. It was reported to him by the builder that the normal after-sales service would long since have been completed but for the refusal of the purchaser to allow the workmen to enter the house.

It is the purpose of this Council to ensure a high standard of construction in house-building. Many builders make no attempt to achieve this high standard and, knowing that they would be refused the certificates of this Council, do not submit their houses for inspection, but prefer to rely on a bluffing kind of salesmanship. Here is a case where a high standard has definitely been achieved. No good purpose is served to the industry by its most important weekly newspaper in publishing such a letter as that of Mr. Crux.

NORMAN H. WALLS,
Director, The National House-Builders Registration Council.

82, New Cavendish-street, W1.

We have shown Mr. Walls' letter to Mr. Crux, who writes: I must apologise for the statement that no representative of his organisation had visited my house, I should have qualified my statement with the phrase 'as far as I am aware.' I now understand that a number of visits were made.

With regard to Mr. Walls' remarks regarding his surveyor's visit on April 15, and that except for one or two shrinkages all otherwise was fine and dandy, I would point out that even during the representative's visit a gang of workmen were at the same time in the house correcting some of the faults complained of. The ridiculous statement that workmen were refused admission to the house to carry out repairs is not true. The workmen came in and were supposed to plane the windows down to fit and open properly which was purely a convenient remedy. As this means had already been tried and failed to rectify the window from hitting the fascia board, I did not want any more 'bodging' as the fascia board over the bathroom was scallop-edged already from the treatment.

As for the other work being 'trivial shrinkages,' well, an independent surveyor's report shows that the kitchen door frame has come away from the brickwork and a brick arch in the front porch has dropped. Mr. Meech, the Registration Council's surveyor, was shown the report and could have checked these items, but I see no mention of them in Mr. Walls' letter.

All the items listed in my letter of April 5 were defects which the builder has now put right, mainly after the publication of my letter, and my surveyor's report is available in respect of these complaints.

Architects' and Surveyors' Salaries

To the Editor of *The Builder*

SIR,—In the issue of *The Builder* of April 5 page 637, I read with interest the report entitled 'Architects and Surveyors' Salaries.'

Although unqualified, I am 33 years of age and have had considerable experience as a site surveyor, and in addition am studying for the IOB exams. For what it is worth, I would like to comment that as well as aiming to achieve the 'pittance' of £2,000 per annum for qualified staff, mentioned by Mr. Kenneth Campbell, how about £1,000 per annum as a minimum salary for staff with five years practical experience? Mine is £13 per week.

G. H. WALKER.

East Finchley, N2.

COMPETITION NEWS

Solar-heated House, USA

AN INTERNATIONAL ARCHITECTURAL COMPETITION to obtain designs for a solar-heated residence, particularly adapted to 'Living With The Sun' in the arid south west of USA is to be organised by the Association for Applied Solar Energy of Phœnix, Arizona. The sum of $2,500 and a contract to supply architectural services for the actual building of the winning design are offered as the first prize. Subsidiary awards of $1,500, $750, and $500 are offered.

The competition, open to practising architects, designers, and students throughout the world, will close on August 15, 1957. Professional adviser for the contest will be James M. Hunter, FAIA, of 1126 Spruce-street, Boulder, Colorado, from whom conditions may be obtained free up to June 1.

The design placed first will be incorporated into a residence to be built at Sundown Ranch in the Paradise Valley area north east of Phœnix. Exhibition of the residence will be one of the features of National Home Week for 1958, to be sponsored in the Valley by the Phœnix Association of Home Builders. The prize-winning residence will also be the focal point of a Solar House Symposium to be held in Phœnix late in September, 1958, under the sponsorship of the Association for Applied Solar Energy.

The residence is to be designed for a typical Arizona family, but the architect will be given a free hand in his interpretation of the most effective way to meet the family's needs. He must also provide the solar collection area necessary to supply the heat requirements of the residence. A swimming pool and its heating equipment will be an integral part of the design.

The assessors, who will meet September 14 and 15 at Grand Canyon to select the winning designs, will be Pietro Belluschi, Dean of Architecture and Planning, Massachusetts Institute of Technology; Carlos Contreras, architect, of Mexico City; Thomas Creighton, editor of 'Progressive Architecture,' New York City; James W. Elmore, Phœnix, architect and Associate Professor of Architecture at Arizona State College in Tempe; and Nathaniel Owings, partner in the architectural firm of Skidmore, Owings and Merrill, San Francisco.

Distinction in Town Planning

THE RIBA AWARD for Distinction in Town Planning is the only award in town and country planning bestowed by the RIBA. It is by conferment only and is limited to Fellows, Associates and Licentiates of the RIBA. Outstanding work in the design and layout, not of individual buildings, but of groups of buildings will be recognised. The award will be made for actual planning work, and while not primarily intended for housing layouts, such layouts of groups of buildings would not be excluded.

Recommendations are submitted to the council by a standing committee set up for the purpose. Personal applications by candidates will not be entertained; the name of a candidate must be submitted by three or more sponsors, themselves members of the RIBA, who will be required to submit details of the candidate's professional qualifications and experience and may be made twice annually, on March 1 and November 1, and must be addressed to the Secretary, RIBA, 66, Portland-place, London, W1.

COMPETITION AWARD

Paisley Technical College

THE designs for the new buildings for the advanced technological or 'Central' Institution at Paisley to serve the West of Scotland and adjacent areas have now been judged by the assessor of the competition, Professor R. Gardner-Medwin, FRIBA, MTPI, of the University of Liverpool, assisted by Mr. T. A. Jeffryes, FRIAS, ARIBA, Chief Architect and Chief Technical Planner to the Department of Health for Scotland, and Mr. Robert Morton, FRIBA, Deputy Chief Architect and Chief Technical Planner. The following are the successful competitors:

Winning Scheme (93).—Alison and Hutchison and Partners, FRIBA, FRIAS, 73, George-street, Edinburgh. (Prize £1,500.)

Second and Third Prizes (£1,000 and £500) will be shared among the following three competitors:

(86).—Hutchinson, Murta and Hall, chartered architects, 26, Park-parade, Roker, Sunderland, County Durham.

(16).—James Cubitt and Partners, 25, Gloucester-place, London, W1.

(27).—Claus Seligmann, ARIBA, in association with J. Warren Chalk and Ronald Herron, Students, RIBA, The Cottage, Selhurst Farm, Grafham, near Bramley, Surrey.

Over 500 architects entered their names. A public exhibition of the designs will take place shortly. The Governors have decided to proceed with the plans. Winning design is illustrated in this issue. The three designs placed jointly second will be shown in a subsequent issue.

Assessor's Award

FOLLOWING is what is described as the 'first brief report' of the assessor to the chairman of the Board of Governors:—

I have no hesitation whatever in recommending for the award of the first prize the project numbered 93.

The design of this project is quite outstanding. I shall describe it in some detail in a fuller report which I intend to submit within a few days, but for the present I would like to make this brief statement about it.

In my opinion, the plan fulfils the requirements of the programme in a way which is both logical and imaginative and which should result in a modern architectural concept of rare quality. Its architecture is powerful and decided, yet by no means overwhelming in its impact, as so many recent technical colleges are. There is a warmth and humanity in the design which is partly accounted for by the sympathetic modelling and landscaping of the sloping site. A series of terraced and partially enclosed spaces, varied and pleasant, has been shaped out of the wilderness between High-street and George-street. If the building and the landscaping can be carried out in the spirit of this design, Paisley will have an example of modern architecture and town planning which visitors may travel many miles to see.

It has been very much more difficult to make recommendations for the award of the second and third prizes. This exceptionally difficult planning programme has resulted in many distinctly different solutions, several of which can be regarded as equally good. The competition has been notable for collecting a refreshing variety of ideas; but after the winner, no design stands head and shoulders above the rest as candidate for second place. There are, however, three designs, very different in their approach but each equally skilful and imaginative in their own way, which I consider are worthy of sharing equally the £1,500 available for second and third prizes.

Scheme 86: This solution links the new buildings to the old by developing the flatter part of the site to the south, leaving a large sloping garden to the north. The new buildings, with a long north-south laboratory and classroom unit of five storeys, linking the communal and administrative units (north) to the engineering workshops (south), are very efficiently planned, and the character of the design is attractive and sensitive. It has many faults, however; not least among them its failure to exploit the slope of the site effectively and to establish a satisfactory link with the monumental group of High-street.

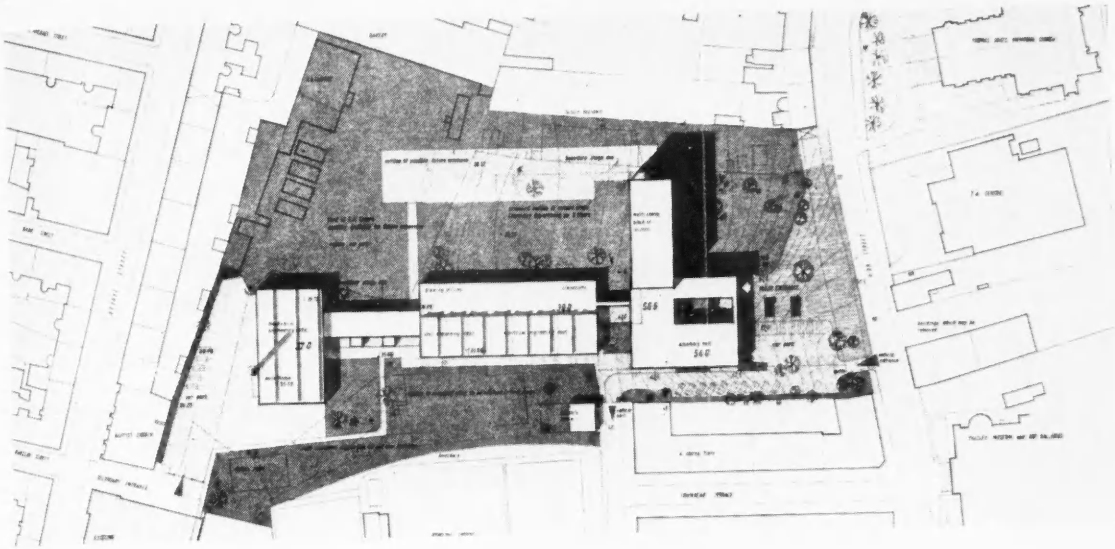
Scheme 16: This is a remarkably bold and simple scheme with a big idea. A great podium or deck extends south from the High-street level. This deck forms the roof over the compactly planned engineering laboratories and workshops lower down the slope, and out of the deck springs a single glass tower of nine storeys which houses the laboratories and classrooms of the physics and chemistry departments. There are other 'incidents' on the deck, such as the dome roof-light feature of the assembly hall, the boiler house chimney and the ship-like air extract from the kitchen, which are all 'sculpturally,' treated to quote the authors' report. There is also a 'lower deck'—a garden court which lights some of the communal rooms.

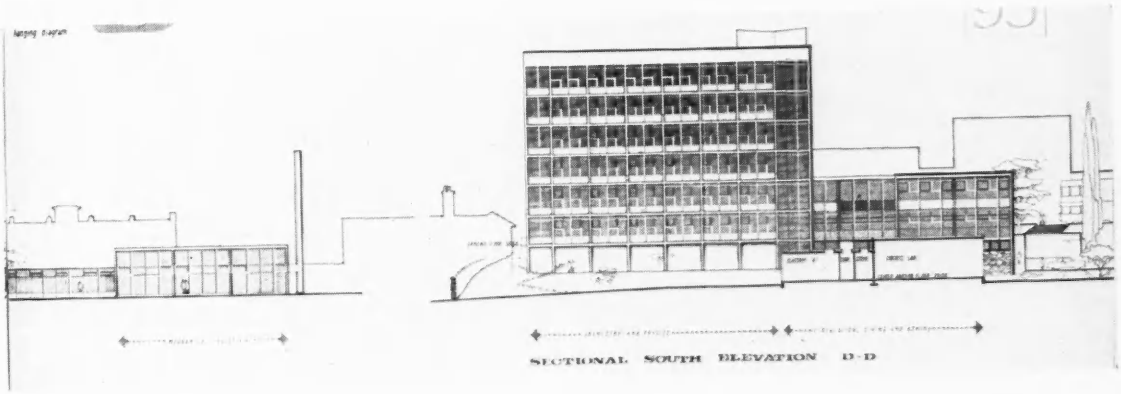
This is a solution of considerable dramatic power. There are certain planning difficulties, however, which will be criticised in detail later, and if the tower were to be successful, it would have to be more costly and elaborate than at present proposed.

Scheme 27: In this scheme a long unit of four storeys (administration and classrooms) is only slightly recessed from High-street, but it has a partly open, partly glazed ground floor which extends the entrance terrace through to an enclosed court on a lower level. The space formed by this court is very attractive and an interesting landscape effect could be achieved. The planning is competent and expansion of the chemistry unit at a second stage has been well considered. The architectural expression is bold and masculine. It has not been very fully worked out, but the plan, in spite of weaknesses in circulation, has great potentialities.

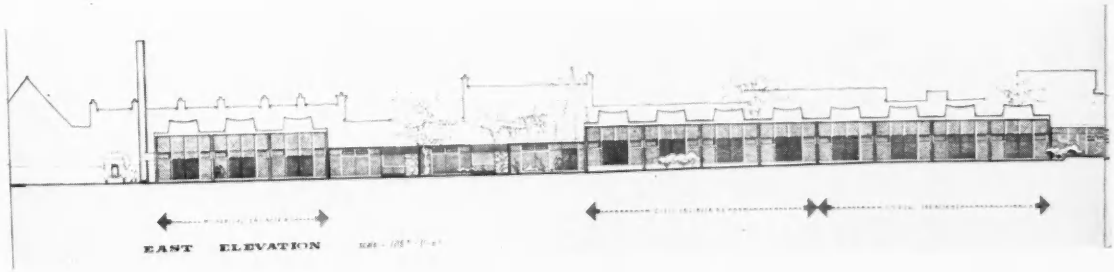
Several other schemes are well worthy of mention and will be fully reported upon later.

In a statement the Governors say that, apart from substantial help from Industry, the result of their public appeal for funds has been disappointing. So far £104,770 has been obtained towards the £200,000 which they must raise out of the estimated cost of £500,000. The Governors will proceed with the scheme, but ask those who recognise the urgent need for the advancement of technological and scientific training in Scotland to send donations to the College Treasurers, Messrs. J. and A. Gardner, 3, County-place, Paisley.

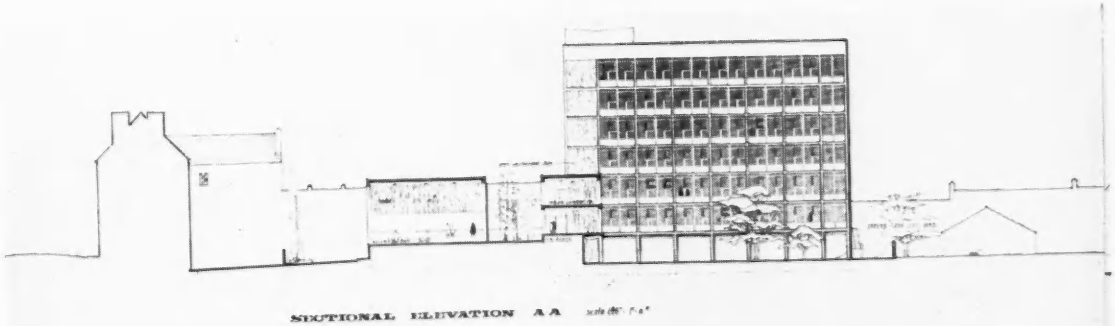




SECTIONAL SOUTH ELEVATION D-D

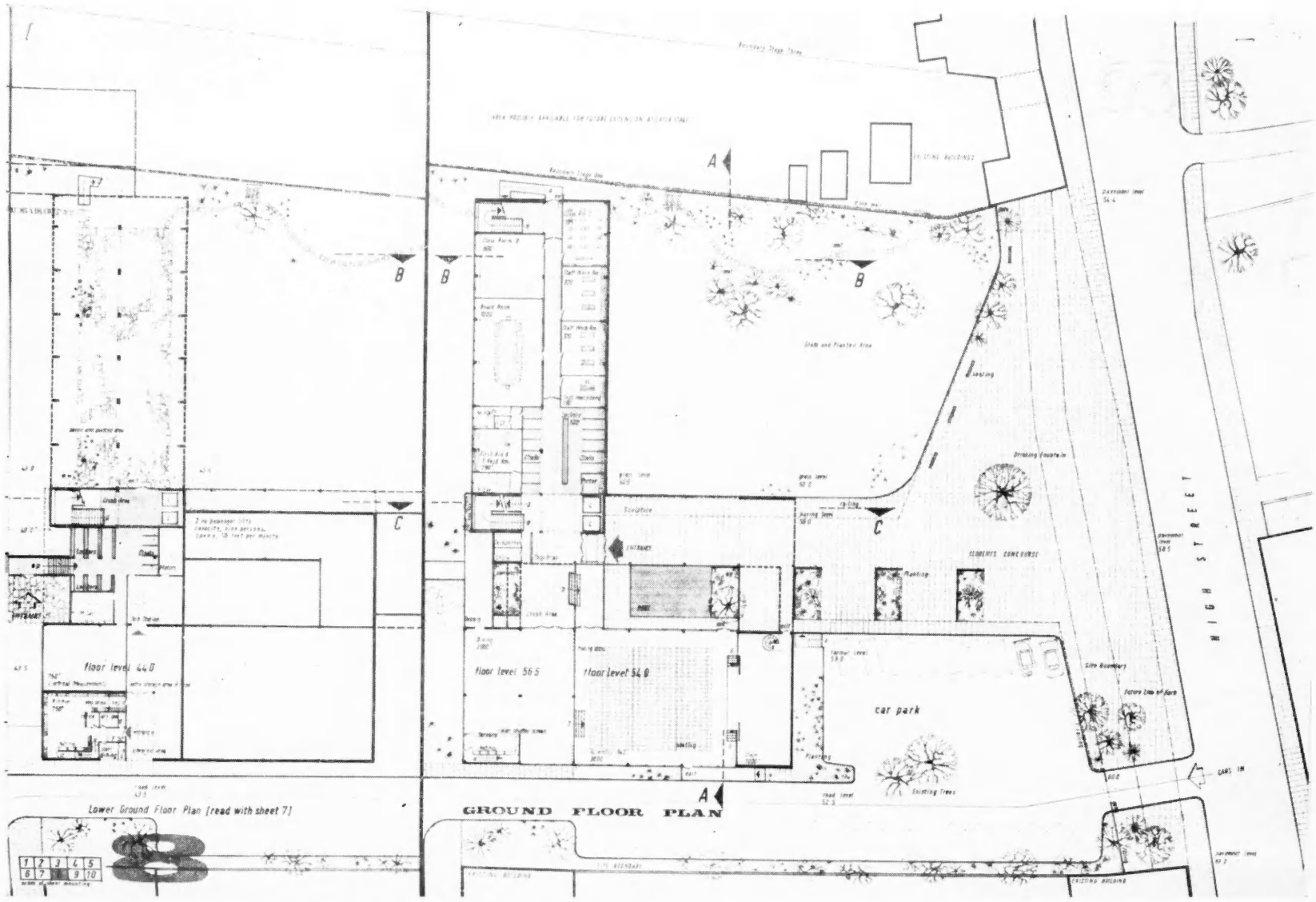


EAST ELEVATION

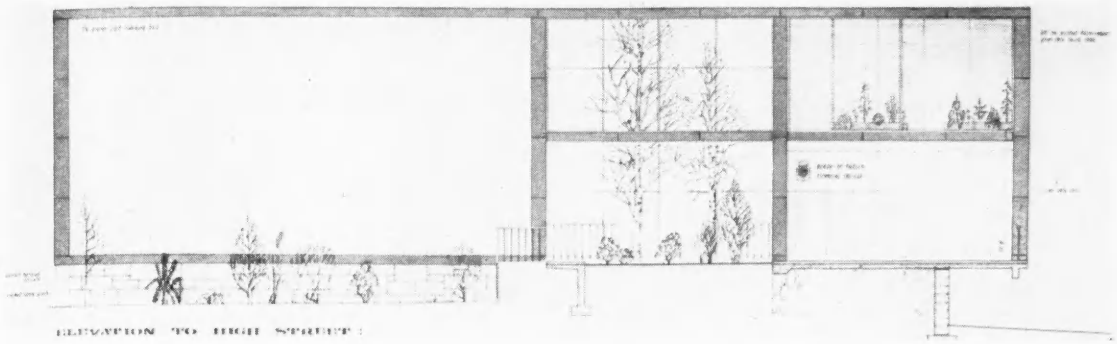


SECTIONAL ELEVATION AA

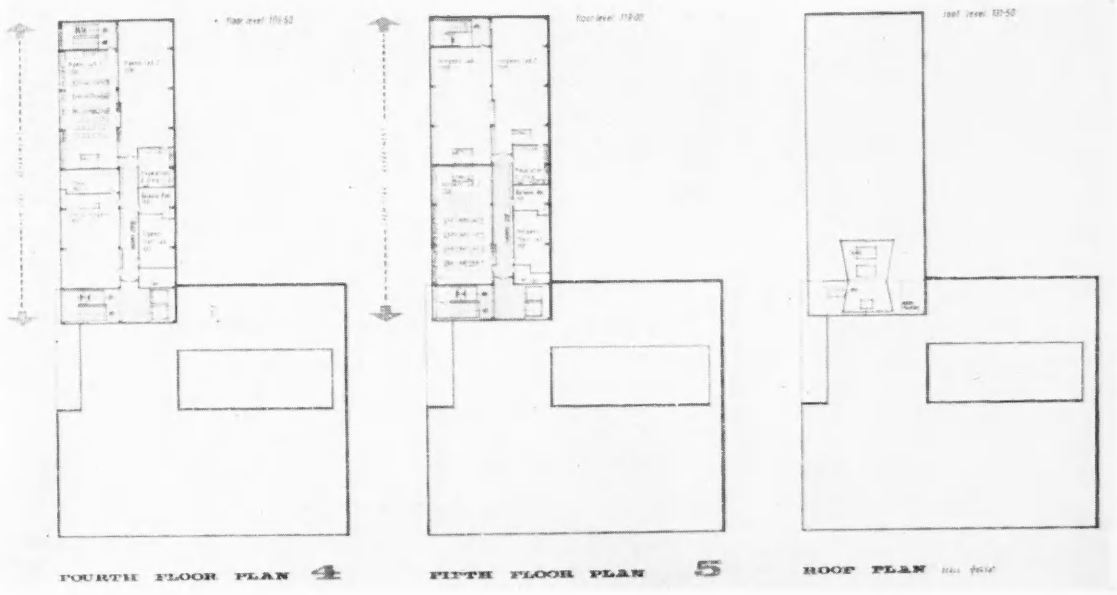
WINNING DESIGN : ALISON & HUTCHISON & PARTNERS, ARCHITECTS



WINNING DESIGN : ALISON & HUTCHISON & PARTNERS, ARCHITECTS



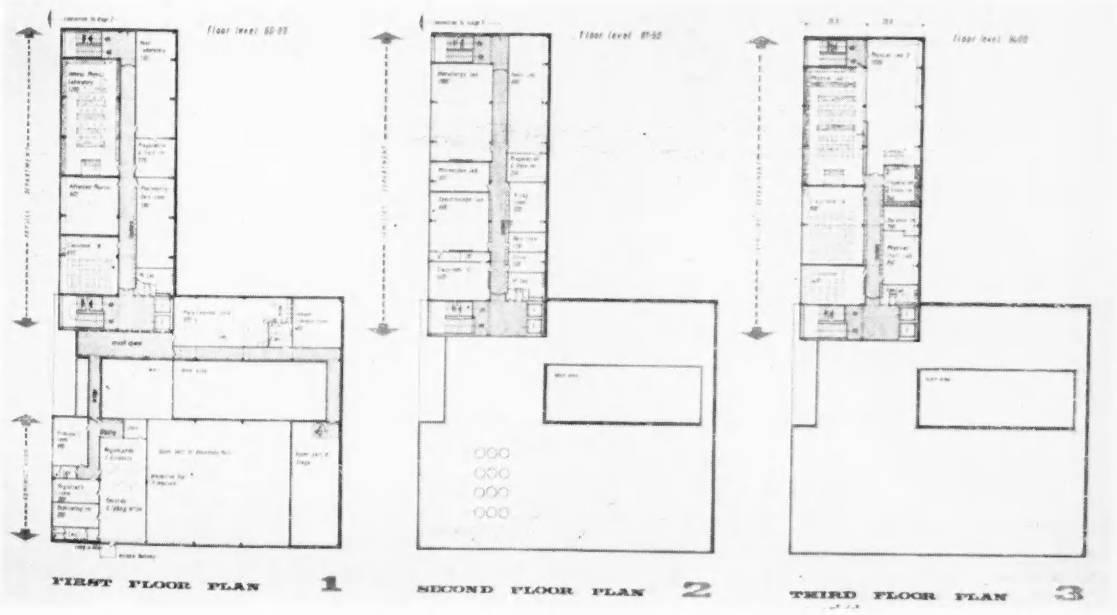
ELEVATION TO HIGH STREET



FOURTH FLOOR PLAN 4

FIFTH FLOOR PLAN 5

ROOF PLAN



FIRST FLOOR PLAN 1

SECOND FLOOR PLAN 2

THIRD FLOOR PLAN 3

WINNING DESIGN : ALISON & HUTCHISON & PARTNERS, ARCHITECTS

WINNING DESIGN : ALISON & HUTCHISON & PARTNERS, ARCHITECTS

PAISLEY TECHNICAL COLLEGE COMPETITION : WINNING DESIGN : ALISON & HUTCHISON & PARTNERS, ARCHITECTS

'MAKE OR MAR'

AN exhibition under this title, sponsored jointly by the Design and Industries Association and 'Sunday Times,' is at Charing Cross Underground Station until May 4. It contrasts two rooms, both the same size, serving the same function and costing the same to furnish. Everything in each is of good design, but it is the choice and placing of them which 'makes' one room and 'mars' the other.

In the foregoing, writes Basil Marriott, I quote or (to be precise) paraphrase. In what follows I express purely personal opinions, but those of one formerly connected with the DIA and well knowing the difficulties. This clever experiment (and I use the adjective advisedly) seems in danger of misfiring, important as is the point implicit.

Frankly I fear that the comparative subtleties of this A-level supplement to the DIA's 'Register Your Choice' triumph may prove either over the head of those who might benefit, or else to be preaching to the converted. The lame explanatory captions seem to find it all too difficult to explain—e.g. (in the Marred room) 'The ornaments are out of step with the sensible design of the furniture'—but does one want 'sensible' ornaments? The fact is that this experiment transcends the scope of good design and fitness for purpose into that of good taste and discrimination.

'Marred'

Now, the former (particularly if their measurable factors are 'isolated' and punched home) can *be taught by such primarily educational bodies as the DIA. The latter can* not *be taught—taste is a very personal thing which you either have or have not—and even then its possession is a matter of opinion, for obvious reasons. Since even those of us who are neither intellectual nor social snobs can scarcely discuss it without dragging in such blushmaking words as breeding and background, I do not propose to expand that flat statement in this brief note.*

I am sorry if this seems tepid water on a brave venture. In any case, it has been most shrewdly carried out by Lady Casson and Misha Black, to neither of whom can this experiment in deliberate lack of discrimination, without over-acting, have come easily.

'Made'

IAAS London Branch Events

A BRANCH LUNCHEON is to be held by the Incorporated Association of Architect and Surveyors on May 17, at the Connaught Rooms.

These are a development from the 'Members Only' lunches instigated to develop closer relationship between branch members and to promote their active interest in the affairs and progress of the Association. Members are now encouraged to invite professional colleagues and, in place of the informal discussion on Association affairs, the luncheons are followed by a general discussion on some subject of general interest to the building industry, initiated by a well-informed speaker on the selected subject. Mr. Norman Keep, FRIBA, FIAA, will speak on 'Technical Education for the Building Industry.' Tickets for the luncheon will be 25s. per head, exclusive of wines.

A Branch Supper is to be held at the Artillery Arms, Victoria, on June 21. This is an innovation, intended to serve the same purpose as the luncheons, for those who find difficulty in finding the two hours or so that the latter demand at midday. They will be lighter in general character, entertainment taking the place of the discussion, and the number attending will be limited to 50 at 10s. 6d. per head.

PAISLEY TECHNICAL COLLEGE COMPETITION : WINNING DESIGN : ALISON & HUTCHISON & PARTNERS, ARCHITECTS

OFFICES, Crutched Friars, London, EC3

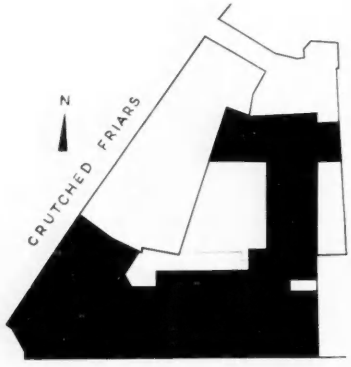
Crosswall elevation

Architects : Messrs. JOSEPH

Consulting Engineer : D. LAIRD HAIR

Quantity Surveyors : CYRIL SWEETT & Sons

Builders : McLAUGHLIN & HARVEY, Ltd.

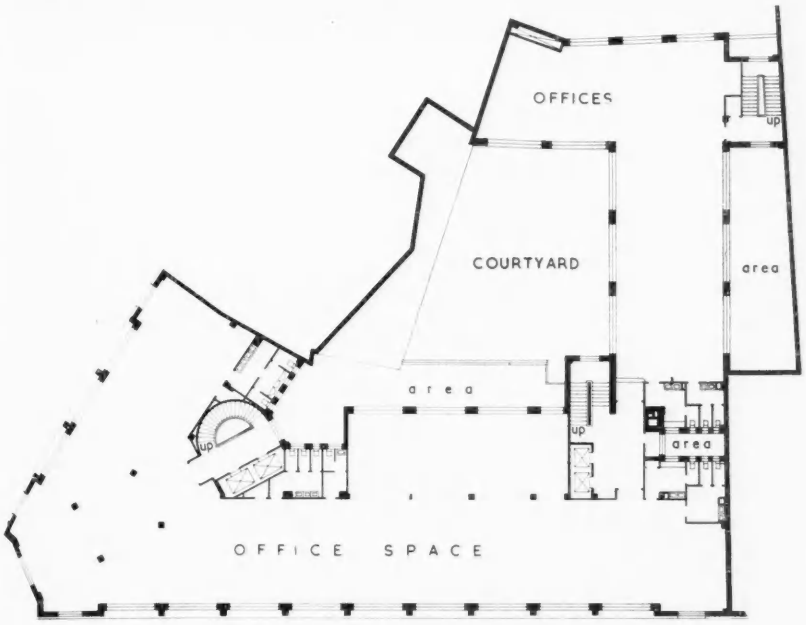


CROSSWALL/LATE JOHN STREET/
SITE PLAN
SCALE 1:1152

THIS building is of steel frame construction with precast reinforced concrete floors throughout. The pier treatment to the elevations consists of a frame of Portland stonework with the stanchions clad in Portland stone, the remainder of the elevations being in keyed fletton bricks, rendered and faced with dove-grey quarzite with golden quarzite between the windows of the Portland stone framework. The storey heights up to the first-floor level have been cased in black reconstructed granite.

The main entrance to the building was originally designed at the corner of Crutched Friars and Crosswall. At a later date, owing to the Restriction of Ribbon Development Act, the position had to be changed and the entrance was accommodated at the Crutched Friars frontage. The setbacks on the principal elevations were determined by the angles of light stipulated by the City Corporation Town Planning Department.

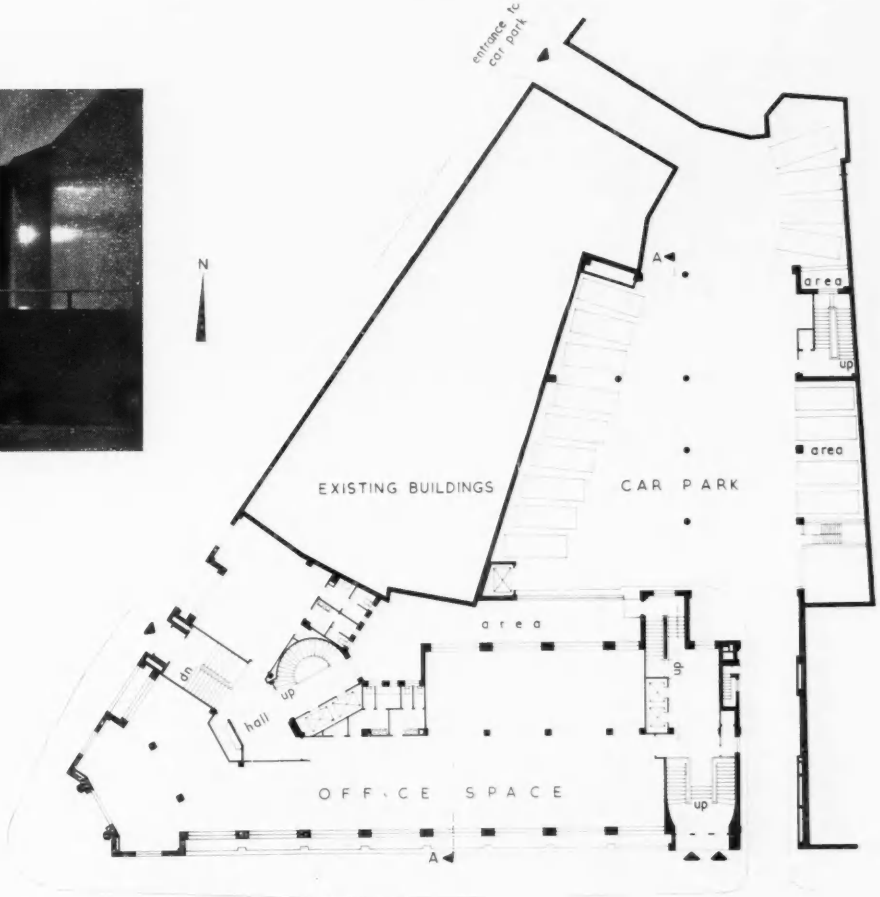
Offices, Crutched Friars, London, EC3



FIRST FLOOR PLAN

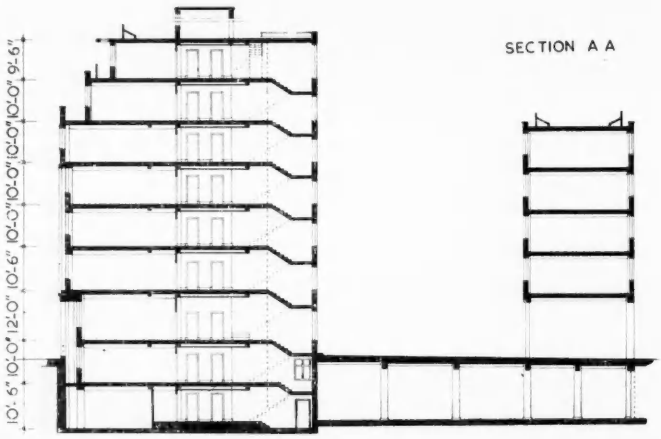
Main entrance in Crutched Friars

Staircase and hall to entrance in Crosswall



GROUND FLOOR PLAN
Scale 10 0 10 20 30 Feet

PLANS & SECTION
Scale: 1 in. = 40 ft.



Main staircase serving the Crutched Friars entrance

Subcontractors & Suppliers:—

Structural steel framework, United Steel Structural Co., Ltd.: precast concrete floors, roofs, internal beam encasures, Concrete, Ltd.: Portland stonework, South Western Stone Co., Ltd.; reconstructed granite, The Empire Stone Co., Ltd.; quarzite facing, John Stubbs (Marble and Quarzite), Ltd.; metal windows, W. James and Co., Ltd.: bricks to area, Uxbridge Flint Brick Co., Ltd.; slate cills, Bow Slate and Enamel Co., Ltd.; wrought ironwork, Culford Art Metal Co.: pavement lights, roof lights and pavement lights in projecting canopy, Lenscrete, Ltd.; area and roof railings, The General Iron Foundry Co., Ltd.; flat roofs, Paropa, Frazzi, Ltd.; asphaltic paving to the car park, Limmer and Trinidad Lake Asphalt Co., Ltd.; passenger lifts, Waygood-Otis, Ltd.; goods lift, Aldous and Campbell, Ltd.; heating and ventilation, Young, Austen and Young, Ltd.

Plumbing, drainage, cold water supplies, gas installation, Smeaton and Sons, Ltd.; electrical installation, The Berkeley Electrical Engineering Co., Ltd.; floor and wall tiling, Carter and Sons (London), Ltd.; British polished Portland stone lining in entrance halls, Walter Jenkins and Co., Ltd.; panelling, flush doors, counters, etc., Flush Woodwork, Ltd.; sanitary fittings, Shanks and Co., Ltd.; Trinsacolin floor tiling, Limmer and Trinidad Lake Asphalt Co., Ltd.; Semastic tile floors, Semtex, Ltd.; terrazzo floors, staircases and lavatory partitions, Ventor Terrazzo and Mosaic Co.; ironmongery, G. and S. Allgood; lightning conductors, J. W. Gray and Son, Ltd.; paints, Mander Bros.

Entrance on Crosswall

The new office wing on Hall-lane

OFFICES, CHINGFORD, E4
for the London Rubber Company

P. A. GOODHEW, ARIBA, Staff Architect to Chamberlain & Willows

B. A. W. HANCOCK, Assistant in Charge

E. C. HARRIS & Partners, Quantity Surveyors

HAYMILLS (Contractors), Ltd., Builders

THE site originally taken over by the company contained two building units and a centre road, representing approximately 20 per cent. site development. Subsequently the company developed the entire site during and immediately after the war period.

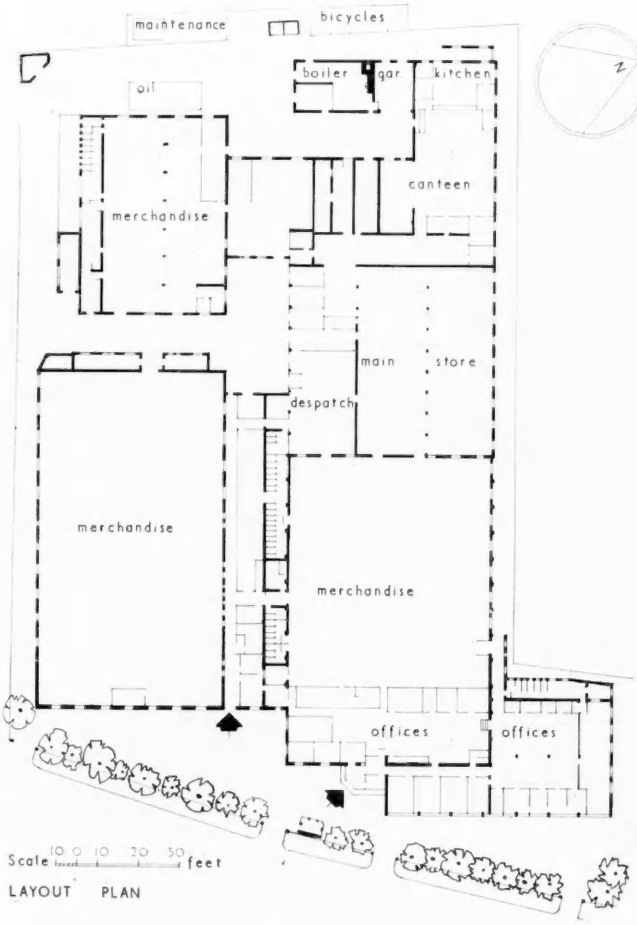
The difficulties experienced during and after hostilities left their mark in lack of finish internally and complete disregard of the façades. The existing factories were sited near the road frontage and, due to their utilitarian background, presented an uninteresting and unsightly elevation. In recent years much work has been directed to the improvement of the factory to bring it to modern standards. This included replanning, extending, provision of proper finishes, total reorganisation of welfare, lavatory and office units and reconstruction of the entire façade to Hall-lane. It was necessary for the work to be carried out without interruption of production. On this site the testing, storing and distribution of products is carried out in conjunction with a manufacturing unit on a neighbouring site, now being replanned in a similar manner.

It was found that the original centre road created an unsatisfactory division of the site, and it was therefore eliminated and replaced by lavatory and welfare units which were ideal in this position. A new service road was provided on the perimeter.

Construction of the various units was not uniform and was in some cases temporary, owing to the difficult period immediately following the company's acquisition of the site. However, new buildings and modifications to the old have now been standardised and comprise steel-framed structures, enclosed with 11-in. cavity walls and asbestos roofing sheets, insulated with asbestos wool and tinfoil lining. The old boilers have been replaced with oil-fired units and heating is by low-pressure hot-water radiators.

To form a new façade, the 'A' roofs were hipped

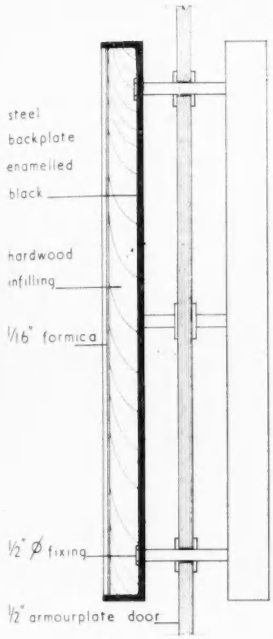
East elevation



LAYOUT PLAN

LAYOUT OF THE WHOLE FACTORY WITH THE REDESIGNED FACADE TO THE MAIN ROAD AND THE NEW PROJECTING WING TO THE EAST

Scale: 1 in. = 80 ft.



SECTION ONE SIXTH FULL SIZE
DETAIL, HANDLES TO MAIN DOORS

and a new 9-in. brick wall introduced that is linked with wall ties to the existing factory wall, the cavity between new and old being 2 in. The concrete trim to window openings, copings and the fluted panels were precast on the site.

The office entrance has a reinforced concrete roof, supported on small teak-encased stanchions and is enclosed with glass brick.

Finishes, Factory : Floor, *in-situ* granolithic ; decorations with flat oil paint.

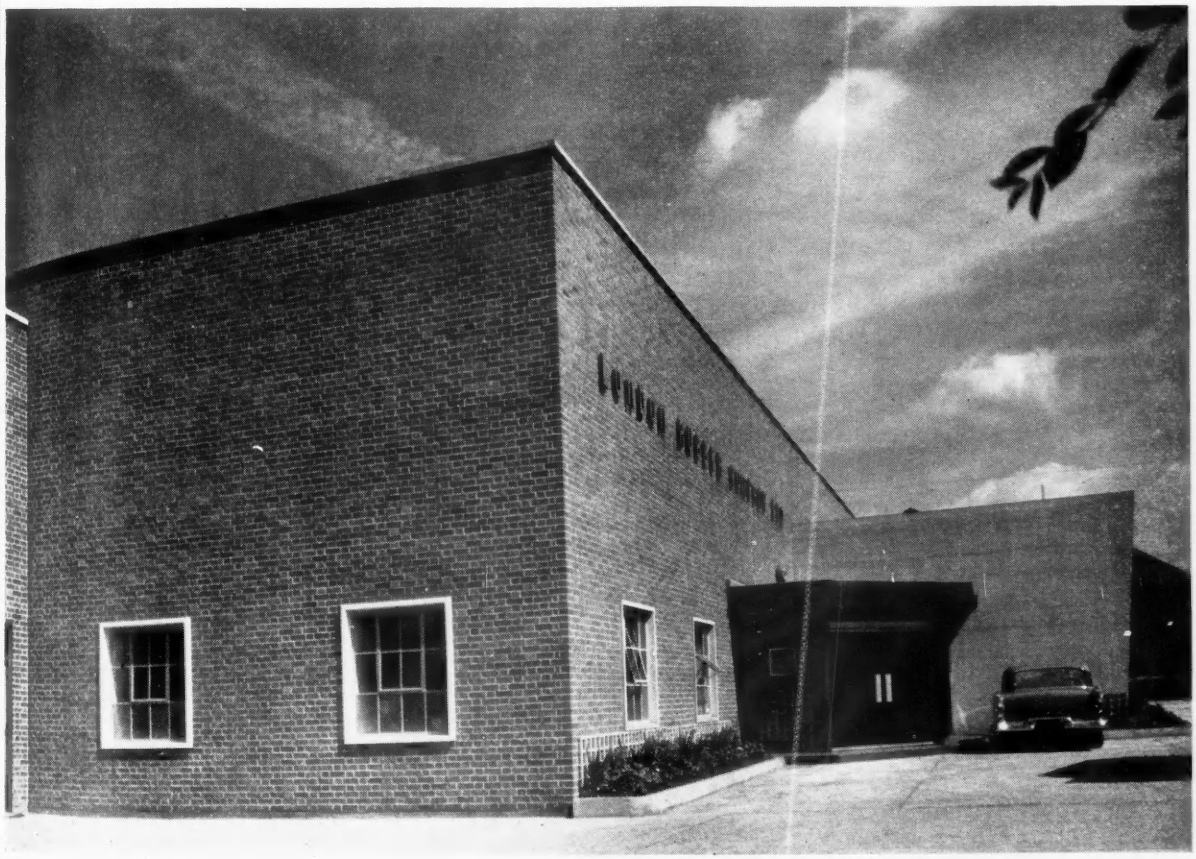
Offices : Floors are Accotile ; walls and ceilings are flat paint on plaster ; timber, including waiting room and interview room partitions, consists of polished teak framing and weathered sycamore panels.

The Directors' Suite : The floors have fitted carpets on felt laid direct on to the floor screed ; walls are panelled to a dado, and flat paint on plaster above ; the joinery is in Afromosia.

Subcontractors & Suppliers :—

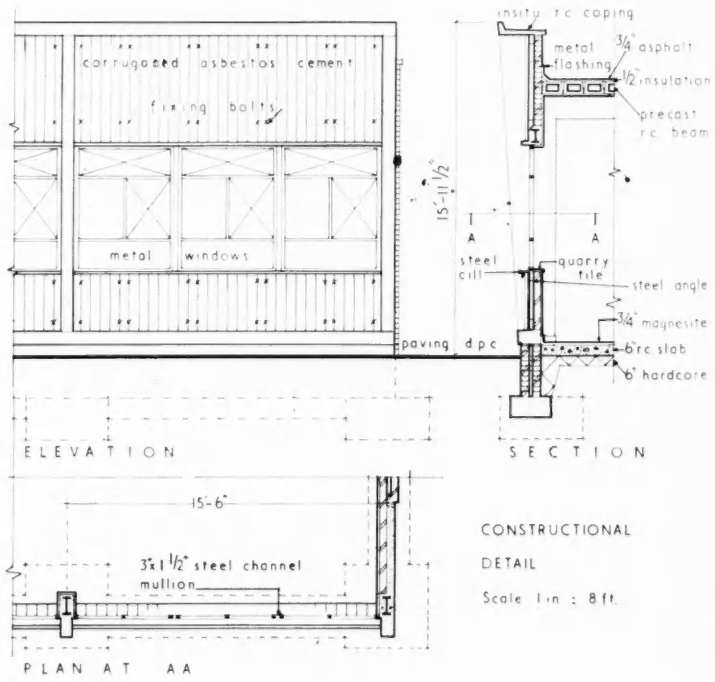
Structural steel, W. M. Howson and Partners ; steel reinforcement, Square Grip Reinforcement, Ltd. ; precast concrete roof units, Concrete, Ltd. ; Bedford grey facing bricks, R. Passmore and Co., Ltd. ; waterproofing, R. I. W. Protective Products Co., Ltd. ; asphalt, Prater Asphalte Co., Ltd. ; metal windows and roof lights, Luxfer, Ltd. ; electrical work, C. L. Williams ; glass bricks, Faulkner Greene and Co., Ltd. ; heating, Chas. P. Kinnell and Co. ; sanitary fittings, City Iron Co., Ltd. ; Accotile flooring, Armstrong Cork Co., Ltd. ; ironmongery and metal lettering, G. and S. Allgood ; armour plate doors, Fredk. Sage and Co., Ltd. ; painting (exterior), Vitretex (England), Ltd. ; (interior), Indestructible Paint Co., Ltd.

The main entrance



From the north-east

Offices at Chingford, E4, for the London Rubber Co.



CONSTRUCTIONAL DETAIL, OFFICE FRONT

CONSTRUCTIONAL DETAIL

Scale 1 in : 8 ft

Salaried Employment and Structure of the Architectural Profession

MR. SHEPPARD'S STATEMENT

IN JULY, 1955, the RIBA Council appointed an ad hoc committee under the chairmanship of Mr. Richard Sheppard, FRIBA, to examine the representation of members in salaried employment, and to review the structure of the profession. The Committee published its first interim report early last year (see The Builder of February 3, 1956), and there now follows a Statement by the Chairman, issued by the RIBA last week. Comment is made in a leading article on page 757.

1. MEMBERS will recall the two or three vital purposes of our work. One group of tasks is to study the income of the profession as a whole; to discover whether or not architects are employed as widely as they should be; and to determine whether our operating efficiency is as high as is practicable and our overheads as low as possible. Another is to find out what sort of income individuals should expect and be able to get in relation to their responsibilities. We must know these and other such things in order to be able to work effectively for a proper remuneration for all architects. We accordingly recommended in our First Interim Report the appointment of a senior officer to the staff of the Institute to carry out this work.

We mentioned also in that Report that, pending this new appointment, we were ourselves making a start on the process of gathering information from various public and private offices; and the progress report below sets out briefly the results of our necessarily small-scale survey.

We carried out five investigations in all, the team consisting of three members and the Secretary, representing whenever possible both types of practice—public and private.

An 'Objective Inquiry'

It was considered that this arrangement ensured an objective inquiry into the methods and organisation of the units examined. I was present at all but one of these meetings, so as to ensure continuity in our method of approach, and in the evaluation of results.

In deciding which offices to visit in this preliminary phase, we were guided by two considerations:—

(a) A good standard of work executed by the office—as an indication of the care and attention given to the production of working drawings.

(b) A knowledge of the office by one or more members of the group, so that a full and complete investigation could be made.

Much of the value of such an inquiry rests in the knowledge that the answers will be treated as confidential and that while the information may be used and published in a synoptic version, it will not be related to any particular individual, group or authority. Moreover, such an inquiry, we consider, is only possible on a professional or institutional basis, since the information is given by the individual as a member of the Institute.

We now feel that the decision to make our interviews personal and confidential was the right one. The confidence with which conditions of employment were discussed in this way was most encouraging. In the case of the local authorities we also had the opportunity of discussing some of the problems raised at these meetings with the heads of other departments.

2. We started these investigations with open minds, hoping the information would be useful, but aware that the results might prove to be valueless, or inconclusive. In fact, they proved most interesting and gave valuable experience in formulating a methodical approach for such inquiries in the future, and on the kind of information to be sought.

Public and Private Offices

3. One point that already interests us very much is that the working methods and organisation of public and private offices seem to be fundamentally the same in respect of carrying out their work—given that the work itself is the same—for we have noticed that the type of work (e.g., housing, industrial) seems to dictate rather substantially the way an office is organised and works. It may be, however, that there are substantial differences as between public and private offices, both in legal liability and in the relationship between the building owner and the architect.

4. With one exception, the offices we examined all have a common method of executive action, work being devolved upon teams of architects varying in size and composition according to the work undertaken. Each team is under the control of one man who is primarily responsible for the direction of the individuals in the group. For the sake of convenience we referred to this man as the Group Architect. In most cases we found the Group Architect was responsible for initiating sub-contracts, variation orders and the financial conduct of the work under his control. There is no need to spend a lot of time describing this method of organisation, since it is well known both in this country and in the United States. The only point which requires emphasis is that the scope and responsibility of the post varied considerably in different offices.

The evidence we now have, which is quite substantial, points pretty clearly to the efficiency and economy of the group method of working, for it enables the capacities of all members to be used very fully. And it in turn underlines the apparent importance of the Group Architect in the scheme of things.

5. We think that the position of the Group Architect, or his equivalent in different types of organisation, should be studied further. Every effort should be made to define and set out his responsibilities; to secure the recognition of such posts in adequate numbers in all types of organisation; and to suggest salaries commensurate with the responsibility.

6. We have been surprised at how high the proportions were of fully qualified architects in both types of offices visited. It seems much higher than before the war, for the range was between 50 and 80 per cent. Offices vary a good deal in this matter, however, and we have not yet seen enough different types to say what is typical of the country generally. A point that has caught our attention was that architects' departments seem to have far higher proportions of professionally qualified staff than other local or central government departments, and this may prove to be a significant factor in professional employment.

7. Our experience (and some notes on job evaluation prepared by one of our members) is being made available to the Secretary for Professional Relations, Mr. Gordon Ricketts, who took up his appointment on January 1, 1957. There must be a large element of empiricism and flexibility in his programme of work, since his lines of inquiry should be open to deflection or adjustment according to what facts emerge. It is likely, however, that quite early in his programme he will:—

(a) Examine in detail the best means of achieving a full analysis of membership by occupation. Our Committee finds that basic to much else they wish to examine is inquiry into the structure of the profession, the amount of work that it carries out and the volume of building work that is still untouched by architects. The most important thing is to know accurately where every member works; though much instructive information should also be thrown up by statistical analyses as to age, education, class of membership, geographical distribution, and so on. We shall want to ask members for these biographical details before long, and we need not stress how important it is to us that every member shall readily co-operate.

(b) Study local authority offices with an eye particularly to the type and annual financial value of work done, structure of the department, establishment, and salaries with corresponding responsibilities.

(c) Conduct, simultaneously with (b), if possible, a small-scale inquiry into private practice—the offices to be selected (assuming their co-operation) for their diversity as to size, structure, location and type of work. The aim would be partly to maintain a proper balance while concentrating mainly on local government, and partly to get a thorough grasp of the right questions to ask and how to ask them. This would be a pilot survey that might well point to interesting lines of

further inquiry, but would not be expected to yield more than tentative conclusions.

MEMBERSHIP OF AD HOC COMMITTEE: Mr. Richard Sheppard (F) (Chairman), Mr. F. G. Southgate (A) (Vice-Chairman), Mr. J. C. Barker, AMTPI (A) (Hon. Secretary), Mr. G. Grenfell Baines, AMTPI (A), Miss N. Beddington (A), Sir Thomas Bennett, KBE (F), Mr. Stuart Bentley, AMTPI (F), Mr. W. F. Frost, AMTPI (A), Mr. D. E. E. Gibson, CBE, MTPI (A), Mr. F. E. Green (A), Mr. F. W. Gregory (A), Mr. Leonard C. Howitt, MTPI (F), Mr. S. A. W. Johnson-Marshall, CBE (A), Mr. A. G. Jury (F), Mr. W. D. Lacey, AMTPI (A) and Mr. John Lincoln (A).

COMING EVENTS

MONDAY, APRIL 29

FACTORY EQUIPMENT EXHIBITION.—Earls Court. Open 10 a.m.-7 p.m. except for Saturday 10 a.m.-5 p.m. Closes May 4.

INSTITUTE OF QUANTITY SURVEYORS (London Branch).—Annual meeting. 98, Gloucester-pl., W1. 6.30 p.m.

MEMORIAL SERVICE. For Sir Patrick Abercrombie. St. Martin-in-the-Fields, WC2. 11.30 a.m.

TUESDAY, APRIL 30

FEDERATION OF MASTER BUILDERS (North Eastern Group).—American/Canadian tour film. Introduced and commented on by W. B. Weaver. The Angel Hotel, Ilford. 7 p.m.

THE INSTITUTE OF BUILDERS.—Annual dinner. The Skinners' Hall, Dowgate Hill, EC. 7.15 p.m.

HOUSING CENTRE TRUST.—'Recent Housing Developments in Birmingham.' By A. G. Sheppard Fidler, FRIBA. 13, Suffolk-st., SW1. 6 p.m.

WEDNESDAY, MAY 1

COMBUSTION ENGINEERING ASSOCIATION (North-Western Section).—'Comparison of Conventional Space Heating Systems,' by J. R. Kell, MIMechE. The Engineers' Club, Albert-sq., Manchester. 10.30 am.

INSTITUTE OF BUILDERS (Brighton and District Centre).—Licentiate discussion club. 'The Scope and Functions of Management in the Building Industry.' By D. E. Woodbine Parish. Cook's Hotel, Old Steine, Brighton. 7 p.m.

THURSDAY, MAY 2

ARCHITECTURAL ASSOCIATION.—'Music and the Architect,' a piano and lecture recital by Max Lock. 34, Bedford-sq., WC1. 8 pm.

RICS (Junior Organisation).—Annual meeting. Mr. J. F. W. Rathbone on work of the National Trust. 12, Gt. George-st., SW1. 6.15 p.m.

FRIDAY, MAY 3.

ROYAL INSTITUTION OF GREAT BRITAIN.—Discourse, 'Urban Improvements of the 19th and 20th Centuries.' By Sir William Holford. FRIBA, MTPI. 21, Albemarle-st., W1. 9 pm.

LMBA.—Accident Prevention Conference. Royal Empire Society, WC2. 2.30 p.m.

SATURDAY, MAY 4

ROYAL ACADEMY.—Summer Exhibition open to public (10 a.m.-7 p.m.).

Professional Announcements

MESSRS. J. DOUGLASS MATHEWS & PARTNERS (E. D. Jefferiss Mathews, Oswald D. Pearce, A. G. Nisbet, Duncan Pearce), chartered architects, have taken into partnership their associate partner, Mr. Michael Ryan, ARIBA, AADipl.

MESSRS. STEPHENSON, ELWELL & KNIGHT, of 38/39, Parliament-st., Westminster, SW1, have amalgamated their practice as from April 1, 1957, with MESSRS. H. BRACK and F. E. BROWN, of 1, Broad-st. Buildings, Liverpool-st., London, EC2, and will in future practice under the sole name of MESSRS. STEPHENSON, ELWELL & KNIGHT, chartered surveyors, at 32, Finsbury-sq., London, EC2 (Tel.: Monarch 1483), and 38/39, Parliament-st., Westminster, SW1. The partners will be: MESSRS. F. W. KNIGHT, FRICS; C. M. HUNT, FRICS; H. BRACK, ARICS; and F. E. BROWN, ARICS.

News of the Week

Birmingham Overspill

THE Minister of Housing and Local Government, Mr. Brooke, recently received a deputation from the Birmingham City Council on the question of the city's overspill population. The deputation explained that, after making full allowance for all the schemes which were the subject of agreements under the Town Development Act, 1952, for expansion of existing small towns and also for schemes still under negotiation, the city council were very far from solving their overspill problem, and that in their view it was essential that a new town should be built under the New Towns Act, 1946.

The Minister undertook to consider what the deputation said; but stated that, while he recognised the magnitude of the problem, he could hold out no hope of a new town being started in the West Midlands by the Government under the 1946 Act.

The deputation pointed out some of the many difficulties and problems which would be involved in the city council carrying out a development of new town character. The Minister nevertheless suggested that, if they were satisfied that such a development was essential, they might consider whether they could not undertake it themselves.

Ald. W. T. Bowen, chairman of the Corporation's Overspill Committee, said afterwards: 'We got nothing at all out of him. We are not going to leave the matter there. Probably it will become necessary for the Birmingham City Council to seek the co-operation of all the Birmingham MPs so that there may be more examination of the problem.'

Leamington Development Scheme

THE PROSPECT of 'positive action shortly' in the redevelopment of the central area of Leamington is reported by the corporation's development committee which states that it has appointed Mr. Frederick Gibberd, CBE, FRIBA, to be the consultant architect planner. The redevelopment of the site occupied by Christ Church at the top of the Parade and the replanning of the King-street/Queen-street areas are to receive Mr. Gibberd's attention. He is also to examine Leamington's car parking problem in the light of the needs of the town as a shopping centre.

Leverhulme Scholarship, 1957

THE LEVERHULME SCHOLARSHIP, tenable at the Architectural Association School of Architecture, London, value £2,000, which includes payment of fees and maintenance for five years, has been awarded this year to Mr. D. R. Pearce, 42, The Drive, Harrow, Middlesex. (Haberdashers' Aske's Hampstead School.)

RICS Junior Organisation

THE Junior Organisation of the RICS are to hold their annual meeting at 12, Great George-street, W1, on May 2. After the meeting Mr. J. F. W. Rathbone will give a talk, illustrated by lantern slides, on the work and activities of The National Trust, of which he is secretary.

Vacancies are still available for the week-end residential course, to be held at Pendley Manor, Tring, Herts, from May 24-26. The subject is to be, 'The Law of Landlord and Tenant and Valuations Arising Thereunder.' Interested members should write to Mr. R. B. Caws, ARICS, Eagle Chambers, 18, Eden-street, Kingston-on-Thames, Surrey. Fee for the course is £3 12s. 6d.

'Designs of the Year'

THE Council of Industrial Design announces 'Designs of the Year,' a special display of 12 products chosen for their outstanding design from some 3,500 shown in the Design Centre during its first year. The selection is being made by a panel of the Faculty of Royal Designers for Industry.

The chosen products will be announced on the morning of May 10, when HRH Prince Philip, Duke of Edinburgh, will present their manufacturers with certificates at an informal ceremony at 28, Haymarket, SW1. The products will then be on view to the public at the Design Centre until June 12.

The late Mr. H. B. Kerr

WE GREATLY REGRET to announce the sudden death on Easter Day of Mr. H. B. Kerr, OBE, chairman and managing director of James Carmichael (Contractors) Ltd. He was 69.

Truscon Travelling Scholarship

THE Trussed Concrete Steel Co., Ltd., offer a travelling scholarship of £125 to enable an associate of the Royal Institute of British Architects to undertake a Continental tour of about three weeks' duration. The winner will be accompanied by a member of the company's technical staff awarded a similar scholarship and they will jointly study reinforced concrete work on the Continent of Europe with particular reference to the collaboration between architect and engineer. A joint report will be prepared. Applicants must be under 35 on April 1, 1957.

The selection will be made by a committee consisting of Mr. C. S. White, FRIBA, Mr. G. Grenfell Baines, ARIBA, and a director of the Trussed Concrete Steel Co., Ltd. Details from the Secretary, The Trussed Concrete Steel Co., Ltd., Lower Marsh, London, SE1.

FROM 'THE BUILDER' OF 1857

Saturday, April 25, 1857.

ARCHITECTURE OF GREAT BRITAIN.—Architects continue in servile obedience to the mere whims of their employers, or in blind cultivation of their own prejudices; mistaking, for matured judgment, the impressions first made, when it was their interest to please in any way, and to get 'the job' on any terms, and thus some of them have become mere bigotted adherents to a peculiar phase of their art, incapable for ever after of its full consideration. This has more particularly shown itself in the Gothic monomania, doubtless to the advantage of that variety of design, in respect at least to the knowledge of its detail and the precedental characteristics of its successive periods.

FROM AN ARTICLE.

SOLID FUEL IN FLATS

Problems of Delivery and Storage

Report Reviewed by ARTHUR KENYON, CBE, FRIBA

IT seems somewhat retrograde in this day and age to have to provide for coal storage in flats. But the open fire dies hard in this country, and as long as there is a demand for it, the storage of fuel is a thing to be planned for, and this must be done right from the start, as it requires a considerable amount of space and very materially affects the planning of the flats. It is necessary that storage be placed conveniently to the staircase, and access to it from the flats must be made easy.

The Report* of the Joint Committee appointed by the London Regional Committee of the Coal Utilisation Council and the London branch of the Institute of Housing is particularly welcome, as it points out the difficulties of providing suitable storage which is easy of access for delivery and convenient for the tenant. The Report states that 'The Committee has been impressed by the wide scope of the problem which has emerged from its discussions and visits of inspection. The conclusions are arrived at with particular reference to London problems and some may therefore prove unacceptable to people in other parts of the country.' It points out the necessity of pre-planning in the first case in the layout of the buildings so that the carry from the delivery lorry is as short as possible, and a distance of 150 ft. is recommended as the maximum carry at ground level. Accommodation roads should be a minimum of 10 ft. wide with a turning circle of 59 ft. Staircases and passages should be 3 ft. minimum, and there should be 4 ft. 8 in. at the point of delivery. In high flats without lifts a bar or shelf 3 ft. 10 in. high for resting a full sack should be provided at intervals on landings.

Protecting the Lift

It is found that the general practice where lifts are installed is to use these for coal deliveries, but protection is necessary to the lift cage, and furthermore it is necessary to have a specially designed wheeled trolley upon which a number of bags can be placed.

The storage compartment should be capable of holding 6 cwt. of fuel, which means a store approximately 3 ft. by 3 ft. with a storage height of 4 ft. 6 in. Carmen express dislike of a chute or hopper, as the fuel cannot be eased out of the sack on to a firm cill and the mouth of the sack cannot be wholly inserted. Spilling of fuel on the floor is, therefore, inevitable.

Fuel storage at ground level has been investigated, and although this enables larger storage spaces to be provided and relieves the coalman from the duty of delivering to the flats, it puts an extra burden on the occupier who has to carry his own fuel.

Packaged coal has also been considered. In Holland, anthracite is packaged in 18-lb. containers made of double-thickness brown paper. The cost of bags and packaging adds 20 per cent. to the price of fuel. In Germany, packaging in 14-lb. bags (eight to 1 cwt.) is being tried out and this adds 40 per cent. to the cost. This extra cost is important. To deliver 5 cwt. of coke, which the Coal Board say is an economical amount, would mean 40 bags to be delivered and stored in one flat. The Gas Boards have considered paper bags holding 56 lb. of coke, but the Committee is unable to make useful comment on this.

The diagrams and photographs shown in this publication are extremely helpful and can be accepted with a feeling of confidence as demonstrating that much thought has been given to the problem. It is unfortunate that there is no detail of the hatch for the removal of fuel at floor level, as this is a matter requiring careful consideration.

For those designing flats where solid fuel is used, this Report is extremely useful and should be studied, as although it does not attempt to solve the difficult problem, it at least points out the difficulties and helps to prevent faults in design. It should be helpful in giving a lead to the conference on this subject arranged for May 9 at the Institution of Civil Engineers.

*Published by the National Coal Board but not on public sale.

GLASGOW INSTITUTE OF ARCHITECTS

The Annual Meeting

MR. THOMAS S. CORDINER, FRIBA, was re-elected president of the Glasgow Institute of Architects at their annual meeting held in Glasgow on April 10. In his presidential address Mr. Cordiner criticised the present attitude of the building trade, which he summed up as 'overtime or else.' In the case of Sunday work, which it was particularly necessary to resist, a lead could be given by Glasgow Corporation or one of the main contractors. Similarly with overtime, if a man worked hard all day, he should not be expected to work at night.

'For years building workers have fought for shorter hours,' he said. 'To-day when they have got them, they fight for longer hours, instead of fighting for higher basic rates, which should be the answer. He also thought there had been a slackening of the standards of workmanship.

MR. WILLIAM MCCREA, president of the RIAS, referred to the 'quiet moving change' which the building industry was undergoing by the introduction and application of science to its methods. It was the duty of the architect to strive to show that having absorbed this new scientific knowledge and applied it to his work, he could still supply that quality in form and detail which lifted up the work of building into the realm of art. This was, in fact, the only justification for being an architect.

Society Changes Name

At a Special General Meeting of the National Smoke Abatement Society held in London on April 11, it was unanimously agreed that the Society should seek incorporation as a Company limited by guarantee and without share capital, and with the new name 'National Society for Clean Air.'

LIFE IN HIGH DENSITY HOUSING

RIBA Symposium Programme

THE Royal Institute of British Architects is arranging a one-day Symposium on 'Family Life in High Density Housing, with particular reference to the design of space about buildings,' to be held on Friday, May 24.

Whilst the design of the building part of new city housing schemes has received a great deal of attention, the design of the spaces between buildings has been comparatively neglected. The object of this Symposium is therefore to discuss the social problems arising from life under the new conditions, and to suggest ways in which the design of the landscape, roads, fences, garages, etc., and the proper provision for children in nursery schools, play centres and playgrounds can help in creating an environment which will be wholly satisfactory for family life.

The following is the programme:

MORNING SESSION: 10 a.m.

Opening Address by Chairman: 'The Problem as seen by a Town Planner,' by Professor Sir William Holford, FRIBA.

'The Problem as seen by a Sociologist,' by Mr. J. H. Westergaard, BSc(Econ) (The London School of Economics and Political Science).

Interval during which coffee will be served.

'The Problem of Social Welfare,' by Mrs. Muriel Smith, BA (London Council of Social Service).

'The Problem as seen by a Housing Director,' by Mr. J. P. Macey, FRICS (Housing Manager, City of Birmingham).

Discussion

AFTERNOON SESSION: 2.15 p.m.

Chairman: Mr. G. A. Jellicoe, FRIBA.

'The Solution of the Problem in Stockholm,' by Mr. H. Blom (Chief of Parks Department, Stockholm).

'The detailed design of site layout, including landscaping,' by Mr. Peter Shepheard, BArch, ARIBA.

Interval during which tea will be served.

'Playgrounds,' by Lady Allen of Hurtwood, FILA.

'The design of Nursery Schools associated with housing,' by Mr. John Stillman, ARIBA.

Current Practice in Great Britain.—Contributions from architects from various parts of the country.

Discussion

There will be a small supporting exhibition illustrating the theme of the Symposium.

It is expected that delegates attending the Symposium will include not only architects but specialists covering the fields of housing management, education, welfare, landscape and its maintenance, building maintenance and the prevention of accidents.

Tickets for the Symposium cost £1 1s. and applications, enclosing cheque or postal order for this amount, should be made to The Secretary, RIBA, 66 Portland-place, London, W1. Envelopes should be marked *Symposium, May* 24, in the top left-hand corner. This fee will include advance copies of the papers, a full report of the Symposium and morning coffee and afternoon tea (but not lunch) on the day of the Symposium.

Cost Planning by Elements

Discussion at the Royal Institution of Chartered Surveyors

ELEMENTAL Bills of Quantities came under heavy fire when the subject was discussed by quantity surveyor members of the Royal Institution of Chartered Surveyors, at the Hoare Memorial Hall, Church House, Westminster, SW1, on April 17.

MR. M. H. THACKRAY, FRICS, chairman of the Quantity Surveyors Committee, who presided, said the question of elemental bills had been very much to the fore for many months, and in view of the interest shown in the matter, the Quantity Surveyors Committee had set up a sub-committee to consider the subject. The sub-committee had prepared a report and members had had an opportunity of studying it.

It was hoped, he said, that the discussion that evening would prove helpful to the Quantity Surveyors Committee as well as the building trade as a whole. Those who had read the sub-committee's report were aware that it was felt that it would be unwise for the quantity surveyors' profession to introduce any large-scale change in the lay-out of their bills at the present time, but later the sub-committee qualified that statement by a proposal to continue studying the matter, and the committee would take a note of what was said that evening. The subject was very much open at the present time, and it was important that in considering whether the principle of elemental bills of quantities was good or otherwise, all aspects of the matter should be approached objectively.

Controversial Subject

MR. E. R. PARRINDER, FRICS, opening the discussion, emphasised that he would try to be factual and impartial, but as elemental bills had become a somewhat controversial subject, perhaps he should say that any opinions he expressed were his own and not necessarily those of the Quantity Surveyors Committee.

First, he asked, what was an 'elemental' bill, and why was it 'elemental'? An element was a component part, but the Oxford Dictionary defined 'elemental' as 'of the four elements—earth, water, fire and air.' Fire and air might describe the atmosphere that evening, but he did not know what they had to do with bills of quantities! He regarded with horror the latest word, 'elemented,' perpetrated recently in a well-known journal.

But whether they were plain words or not, the expression 'elemental' bill—he would coin a phrase and call it 'elements' bill in future—was now used to describe a bill which instead of being divided into the normal trades of excavator, concretor, bricklayer and so on, was divided into sections, each of which was an important element in the building. Thus all the items relating to floor construction might be billed under one heading, all those relating to internal partitions under another and so on. Within each element, however, the items were still arranged in trade order.

Some trades such as drainlayer, internal plumber, heating and hot water engineer—especially if followed by the builder's work—were complete elements in themselves, while it was fairly common practice to bring together all the items forming the sub-structure or the external works. But the elements bill went further and it did involve a rearrangement of many of the items in the bill, especially those to do with the structure and the finishings, and a duplication of some of them. The extent of the rearrangement and duplication depended on the number of elements and the number of items which were allocated to each.

Elemental Cost Analysis

Why, Mr. Parrinder asked, had this rearrangement been suggested? The conception of the elements bill, he said, arose directly from the system of cost analysis by elements first advocated in Ministry of Education Building Bulletin No. 4, 'Cost Study.' This system related the tender price of each operational element to the total superficial floor area—thus under the element 'Internal Partitions' might be collected all the different kinds of partition in the building, together with glazed screens, the folding and sliding division doors, the lintols over openings in the partitions and any borrowed lights and so on. He said 'might be' because there was, as yet, no agreed standard for the composition of an operational element and different advocates of the system had proposed different elements and different items to be included under each element heading.

But the principle remained that the total tender price of all the items in each element was divided by the total superficial area of the building, so that the value of all the items included under the element 'partitions' might be expressed as, say, 1s. 4½d. per foot super of the floor area.

He thought enough had been published about elemental cost analysis to make it unnecessary, even if time allowed, for him to expand about it further, but very briefly this kind of analysis, it was claimed, enabled a cost plan to be prepared at the design stage for each element of the next similar building; a cost which, it was hoped, would provide a reasonable basis for expecting that the tender cost would be very close to the client's target.

Cost analysis and cost planning there must be, if the architect and the quantity surveyor were to survive. This particular system of cost planning was an interesting experiment which, as the Ministry of Education and the Herts County Council had shown, could work—providing that the buildings compared were very similar in character and design and the client's requirements were also standardised. But it was fair to say that at the moment the practice, as distinct from the theory, of 'elemental' cost planning was unknown to all but a very few architects or quantity surveyors—the demand for the 'elements' bill was therefore very small.

Whether cost planning by elements was the best system that could be devised was a matter that was being examined by the Institution's Cost Research Panel and the RIBA Cost Research Committee. That was why the Elemental Bills Sub-committee felt that it was outside their terms of reference to investigate the merits of elemental cost analysis.

The sub-committee were thus in the quandary that they could not usefully discuss the *raison d'etre* of element bills. However, although at first thought it might seem that if cost analysis and cost planning by elements was found to be the ideal system for general use, the case for elements bills was nearly won—and contrarywise—second thoughts showed that the two were not interdependent.

An elements cost analysis could be prepared, without too much difficulty, from a normal bill. Many quantity surveyors had done this, without too much grumbling. The advantage, of course, was that the tendering contractors were not inconvenienced and the analysis, when prepared, could be supplied to the architect and to the successful contractor, if he required it. Those architects—and it must be said at the moment they were very few—who had used elemental cost analysis had said that it did not matter to them whether the analysis was integral with the bills or a separate document. On the other hand, the point was made that if the analysis was not ready-made as part of the bill it might never get done.

A Clearer Picture

Another possible solution which got over this difficulty and which had been successfully tried out, was for an abstracted analysis to be bound in at the end of a normal bill and filled in by the quantity surveyor—or rather by his Comptometer operator—from the prices of the lowest tenderer. Again the unsuccessful tenderers were not inconvenienced.

An interesting possibility which came out in discussion with architects was that of elements drawings. The advocates of elements bills also suggested that they had other advantages, especially to builders and quantity surveyors, as well as providing the basis for elements cost analysis. It was said, for example, that they were easier for the architect to understand and to relate his drawings. It was also said that they gave the builder's estimator a clearer picture of some parts of the work, that they were much more useful to the site staff and that they assisted contract planning, buying, bonusing and the preparation of interim certificates.

In considering these claims the sub-committee were handicapped by the difficulty of finding a representative number of people who had used an elements bill, or seen or even heard of one. But, with a few exceptions, the reaction of builders was strongly against any departure from the trade by trade and bulk quantities arrangement of the normal bill. Those who had tendered on elements

bills said that the estimator's job took longer—because of the necessity of abstracting sub-contractors' items from the various elements—and there was greater possibility of error. Overheads, and therefore tendering costs, were increased. This attitude would perhaps be thought alarmist by the advocates of the bill but, nevertheless, it was strongly felt.

The evidence given to the sub-committee was that the rearrangement of the bill could be useful to the site staff, but that it was of no particular advantage for buying or bonusing nor for the calculation of interim certificates. In connection with contract planning, the cogent point was made that it was very unlikely that the elements required for cost analysis purposes would be the same as those used for progressing.

The reaction of their own quantity surveyor members to elements bills touched all extremes. The supporters and the opponents of the idea of elements bills were about equal in the vehemence of their opinion but the 'no's' had it by a large majority. Again, the sub-committee found it difficult to assess the evidence because so few elements bills had yet been prepared and there was wide disagreement over the time they took and the amount of extra work involved.

Concluding, Mr. Parrinder said the sub-committee felt that there was not yet sufficient evidence to suggest that the advantages of elements bills outweighed the not inconsiderable disadvantages—especially as the main purpose of the elements bill, to provide a cost analysis, could be met by an analysis separately prepared from the normal bill of the lowest tenderer.

Evidence Submitted

Mr. E. Morley Smith, FRICS, who followed, summarised some of the evidence which the Elemental Bills Sub-Committee received from a number of people who, he said, were more experienced in the method than he.

The first conclusion one came to, said Mr. Morley Smith, was that with the elemental bill the time factor in taking-off was increased so that it became necessary to turn to the working-up process to see if there was any likelihood of obtaining a corresponding saving. The experienced ones stated that any possible reduction in the amount of abstracting by a higher proportion of billing direct was more than offset by:—(a) extra time taken in abstracting a greater mass of dimensions and in billing repetitive items; (b) abstracts had to be opened afresh for items repeated in the various elements, this particularly applying to concretor, bricklayer, carpentry, joinery, glazing, and painting trades; (c) a considerable amount of cross-abstracting from the dimensions of one element to the abstracts of another.

During the final checking and editing it had been stated that the writing of preambles involved extra time as the items to be covered in the various trades were distributed throughout the various elements. Again, it was stated that it was not an easy matter to check that items which were not obviously allocated to any particular element had in fact not been missed.

While it was generally conceded that a bill prepared by elements was a larger and longer document than a normal bill, estimates of the increase varied between 6 per cent. and 50 per cent., but one had to remember that the number and composition of the elements as well as the nature of the job would have a direct bearing on this.

Mr. Morley Smith said since he became embarked on the subject he had kept asking himself—and he was still doing so—when you have done all this, have you got anywhere ? Have you made any noteworthy contribution towards the all-important problems of Cost Analysis and Cost Planning ? Of what use was the information gained going to be if not for the job in question, then for other jobs of a similar nature ? Were the separate elemental costs of any real value to an architect or designer ? Or was it not better for the architect to ask the quantity surveyor for certain specific information as and when he needed it ? Was it not, he asked, extremely dangerous to use figures for one job in assessing estimates of costs of another ? And where did the supposedly confidential nature of priced bills fit in with all this ?

Mr. Morley Smith declared that having spent a great deal of time with his far more learned colleagues and having gone into the whole subject in great detail, he personally was still a long way from being convinced that this form of bill would provide anything more than a strictly limited benefit and that only on similar and stereotyped buildings.

Mr. A. T. Brett Jones, ARICS, said he thought the difficulty of deciding what elements they wanted to put in the bill was insuperable.

Mr. J. K. Carless, FRICS, said he had prepared two small elemental bills and he liked them. His architect also liked them, but his builders did not particularly like them, although they did not make any complaint because the bills were very small and very simple. He was now approaching another job from an elemental bill angle and he was looking forward to the experiment.

Recurrent Items

Mr. E. H. Wilson, FRICS, described how he had prepared three elemental bills for the same purpose and said the number of items which appeared in the bills varied, with an average of 5 to 7½ per cent.

Mr. C. M. Nott, ARICS, questioned the advantages of the elemental bill, declaring that if they were going to get building prices down they must give the builder the opportunity to improve his pricing.

Mr. L. J. Stone said he had seen one elemental bill which contained 14 elements. He thought one of the difficulties was that in preparing an elemental bill they produced technical figures which could only be interpreted by technical people.

Mr. G. Grenfell Baines, ARIBA, said it was cost design that really mattered and how they collaborated with the architect in this matter was largely up to the surveyor. It was very important to the architect to work by cost analysis. He believed that cost analysis and cost planning was something they must develop. He emphasised the need of expert service in cost planning and cost design.

Mr. J. B. Brookes, CBE, FRICS, stressed that they must consider whether the elemental bill would make a greater contribution to efficiency. In some instances he felt it would be a retrograde step and lead to a lot of confusion. They had got to give the architect all the information so that he could plan economically and give information to his clients on any job. He did not think the elemental bill would help in these matters.

Mr. H. P. Lovell said his firm had carried out a number of contracts with elemental bills, and the estimators and surveyors were pretty strongly against them. One of the difficulties at present was that there was no definite basis for elements. Another reason why they were against them was the additional cost and trouble involved.

Put 'Out of Court'

Mr. James R. Turner, ARICS, felt that the case that evening had put the elemental bill out of court. Builders, it seemed, did not like them. He thought the best way to help the architect was with approximate quantities.

Mr. J. Nisbet, ARICS, felt that more information was needed before they were convinced of the value of elemental bills, and the special sub-committee should continue its work with that object in view. He thought much of the criticism of elemental bills came from misunderstanding cost analysis.

Mr. A. Pott, supported Mr. Nisbet and made a plea for looking at the subject in a balanced way. Although there was a wide difference of opinion he felt that some views had been exaggerated. They wanted more evidence. He was glad it was proposed to keep the sub-committee in being so that the subject could be pursued, and he hoped more information would be made available in due course.

Mr. R. Foster said he was also delighted they were not closing the door. Although the elemental bill might not be the answer to some of their problems, he thought it might be a step in the right direction.

Mr. H. Nicholson, FRICS, emphasised that in their considerations of the subject they must see how it would apply to the building industry as a whole and not any particular part of it.

RIBA Prizes and Studentships

A pamphlet, 'RIBA Prizes and Studentships for 1957-1958,' is available from the RIBA, 66, Portland-place, W1, price 2s. 9d., post free.

Safe Use of Electricity on Building Sites

Talk by Mr. S. J. Emerson to Accident Prevention Group

FOLLOWING the annual meeting of the London Building and Engineering Contractors Accident Prevention Group held at the Safety Centre, Horseferry-road, SW1, on February 20, MR. S. J. EMERSON, BSc., HM Senior Electrical Inspector of Factories, gave a talk on 'The Safe Use of Electricity on Building Sites.' Mr. Emerson said:

There is, perhaps, a tendency in the building industry to take the dangers of electricity too lightly and each year a number of fatal and serious non-fatal accidents occur which might well, with a little care, have been prevented. It is, however, true that many accidents are caused by the injured persons taking unnecessary risks or failing to utilise the means provided for their safety, and on looking back over the post-war years it is apparent that the failure of the individual, and not defective or irregular apparatus, is responsible for a great many accidents.

The precautions necessary to ensure safe use are, I think, admirably expressed in the terms of Regulation 1 of the Electricity Regulations, which states, firstly, that only apparatus suitable for the work it may be called upon to do should be installed, secondly, that it should be properly installed, and thirdly that it should be efficiently maintained after installation. The British Standards Institution now cover a wide field and provide a yardstick of quality and safety in design to which most manufacturers adhere. The same authority is also providing, through its Codes of Practice, increasing guidance in installation and maintenance of electrical plant, and it is confidently hoped that this will lead to higher standards of workmanship.

Safety Sacrificed

In many cases in the past safety on buildings in course of construction has been sacrificed in the dangerous search for the cheapest possible job, and experience has shown that electrical equipment is not always installed with a full appreciation of the many considerations involved to ensure safe usage. The importance of avoiding the general use of VIR cable cannot be overstressed; extra heavy tough rubber sheathed cable should always be used with both portable apparatus and for fixed temporary wiring, and only extension connectors of robust construction affording full protection of the flexible cable at the point of entry to the apparatus, and provided with efficient cord-grips, should be used. Whenever possible robust solid rubber type plugs and sockets should be employed.

The best safety schemes can be nullified if maintenance is neglected or wasted on shoddy equipment. To facilitate this, records should be kept of all tests and inspections so that any gradual deterioration may be readily detected.

When we examine electrical accident statistics for Great Britain we see that despite the universal use of electricity in factories and on building sites and works of engineering construction, the number of electrical accidents is a small proportion of all accidents, but, however, they have this important feature, that more than 5 per cent. of them each year prove fatal, and this is disturbing. My own experience over the past 25 years shows that the conditions associated with fatal accidents in the main differ little from those responsible for minor accidents, and conversely it follows that many of the minor accidents might easily have proved much more serious.

In connection with accident statistics it is perhaps of special interest just to look at the trend of things at the turn of the mid-century. For the first half of the century there has been a steady increase in industrial electrical safety. In the early years of the century electrical safety organisations were unknown, but today the initiative and foresight of the Royal Society for the Prevention of Accidents and managements, the hard work of the Safety Officers, and the broad contact with the human element furnished by the Safety Committee, all play their parts in this magnificent achievement.

Fatal Shocks

It is interesting to note that approximately two thirds of the electrical fatalities occur at voltages below 250, and of this number between 60 and 80 per cent. are associated with portable or transportable apparatus, and its associated connections. It follows, I think, that if the recommendations made by the Factory Department to reduce voltage for portable tools and hand inspection lamps were universally adopted the fatal accidents due to electricity would be halved.

The dangers we have to consider in the use of electricity are: Electric shock, electric burns, fire and explosion, eye flash and radiations.

The first important fact to appreciate is that it is the electric current which kills. We have to consider the magnitude of the current, the path it takes through the body and, of course, the duration of the shock. Experience has shown that direct current and alternating current at low and high frequencies differ in their effects, but there is no point in going into these differences in any detail except perhaps to note that alternating current at the normal frequencies (25 to 50 cycles) is the most dangerous.

One can receive a fatal shock from a 50V alternating current system. One might ask 'Why then do persons survive from shocks due to contact with 200/250V, and higher voltages?' This is due to a combination of circumstances: The contact resistance may be high due to dry skin and clean dry clothing, boots, etc., and in these conditions contact resistance may be of the order of 200,000 ohms or more. Initial contraction of the muscles of the body may throw the victim clear of the live conductor or metal. The current may not have passed through the heart. It is perhaps as well to mention at this point that all persons who are exposed to the possibility of electric shock should be adequately informed on the steps to be taken should such a mishap arise. In some industries it is the practice to instruct all electricians, electrical fitters, mates and other workers in steps to be taken following electric shock. This is a very desirable procedure, particularly if accompanied by periodical drills.

Artificial Respiration

I cannot over-emphasise the necessity for prompt and continued application of artificial respiration, as there are many instances on record where victims of electric shock have revived from apparent death after several hours' treatment. Burns caused by electricity are invariably associated with physical shock and great care is necessary in their treatment. Perhaps the worst burns are those due to high frequency.

The object of a fuse is primarily to prevent overheating in the circuit which it protects. Overheating will not only cause damage to the insulation of the wires but will also involve risk of fire. Precautions must, therefore, be taken in the design of fuseholders and fuse boards to ensure that the fuse will not cause the very trouble which it is intended to prevent. The object of a fuse is attained by the melting of a metal wire, which is a portion of the circuit, when the current in the circuit reaches a predetermined maximum value. This value is so chosen that it will give a generous margin over the working current. For small circuits a simple fuse is the cheapest protection device.

Fuses are not altogether satisfactory and they have been largely superseded by circuit breakers which combine the functions of switches and fuses. No hard and fast rule can be laid down but on LV and MV circuits the cost of a circuit breaker is generally justified for currents above 100 amperes. Open pattern fuse holders of the channel back, barrel or pot type are dangerous and should not be used.

In any talk on electrical safety the subject of earthing must of necessity play an important part. 'Earthed' means connected to the general mass of earth in such a manner as will ensure at all times an immediate discharge of electrical energy without danger. The implication of the definition is that not only must the electrical continuity of the earthing conductors be sufficient to prevent dangerous rise in pressure in the event of the metalwork becoming accidentally live, but also that the mechanical strength of the earth conductors and the method of attachment must be such as to ensure that the apparatus is efficiently earthed at all times.

Earthing on the lead sheath and armour of the supply cable is the best method and many of the supply authorities now permit this. The next best is a good system of underground metallic water mains, but if these are not available it may be a very difficult problem. Where factories have their own substations they are well advised to run a heavy

section copper conductor back to the neutral point of the transformer.

Each year a number of fatal and serious accidents occur due to contact with OH transmission lines and I cannot over-emphasise the serious danger of carrying on building and civil engineering near overhead lines. In the post-war years there have been fatal accidents, serious accidents and a number of minor accidents due to persons making accidental contact with OH lines.

A 110/55V system is strongly recommended on all building sites for portable lamps and portable tools. In dangerous situations such as arise inside boilers or tanks in course of construction greater safety is achieved by reducing the pressure as low as possible and for AC systems small double-wound transformers giving 12 or 25V on the secondary side are readily available and have been extensively adopted. The transformers should preferably be enclosed in cases of robust insulating material.

LARGE FIRES IN FACTORIES

Construction Methods Often to Blame

FIRE losses for 1956 at £27,512,000 showed a reduction from the previous year for the first time since 1949, states the current issue of the Fire Protection Association's *Journal*. Figures are now available from the Joint Fire Research Organisation which show that the steady annual increase of previous years has been very largely due to rising values. In view of the estimated increase of 3 per cent. in the cost of living in 1956 the reduction in fire losses is, therefore, more significant than it appears at first sight.

The recent fire at Jaguar Cars, Ltd., at Coventry, which caused damage of £2,170,000 has brought fire losses into the news. Losses as heavy as that at Coventry are exceptional but it is not generally realised how many fires there are, that each cause serious damage and what a high proportion of the total fire damage they account for.

There were 29 fires in 1956 which each caused damage of more than £100,000. One of these fires alone, at a refrigerator manufacturer's at Crewe in September, 1956, caused £1,400,000 damage and there is a detailed account of this fire in the *Journal*.

An examination of the conditions under which the fire at the refrigerator factory developed and of the details of construction given in the analysis of large fires leads to the same conclusion: fire frequently grows to large proportions because the construction of the building encourages rather than hinders its progress. The presence of timber floors, combustible partitions, and unprotected openings and the absence of proper fire-breaks are major causes of heavy damage.

It is not possible, of course, to reconstruct old buildings although their fire hazard may be lessened by modification and by the removal of superfluous combustible material. In new buildings, however, fire precautions can be incorporated during construction. Examples of this can be seen in an article on 'Rebuilding the City of London.' Here can be seen how fire prevention methods are being applied to the new, and often exceptionally tall, buildings now being put up in the City.

SAFETY PRECAUTIONS ON SITE

Failure to Earth Electrode Adequately

A FINE of £25 with 10 guineas costs was imposed at Clerkenwell Magistrates' Court on April 16 on Tersons, Ltd., builders, of 4, Dollis-park, Finchley, N3, on a summons alleging that they contravened the Factories Act on a site at Muriel-street, N1, by not taking adequate precautions—such as earthing—to prevent the metal casing of a socket outlet from becoming electrically charged, as a result of which one of their employees died from electric shock.

Miss M. E. Collington, HM Inspector of Factories, prosecuting, said that the accident took place on September 6 last year. The employee who was killed, Leonard Woodley, was a carpenter's labourer, and one of his duties was to make tea for the other men there, in the messroom. He went to do that in the morning. 'We don't know exactly what happened,' Miss Collington went on, 'but the next thing was that a boy, who had been delivering milk to the hut next to the messroom, came rushing into the site office and said there was a man unconscious in the messroom.'

The foreman carpenter, Mr. Griffiths, and others went to the scene and found Woodley slumped in a sitting position on the concrete floor. There was water on the floor, and the handle of an electric kettle lay across the palm of his hand.

Later, Mr. Pearce, district engineer of the London Electricity Board, made tests. He found that the metal casing of the socket outlet in the room was live, with about 200 volts of electricity. There was an even higher voltage between the earth terminal of the socket and the wet part of the concrete floor. The earthing electrode was some distance away, in loose ground. It was rusty and live, at about 230 volts. It was not an effective earth and seemed incapable of taking away any current.

Mr. George MacWaters, safety officer for Tersons, said the firm employed electricians as sub-contractors on the site. 'We considered we were employing competent experts to do the job,' he added. Mr. Thomas Curtis, chief electrical engineer of the Essay Electric Co., Ltd., the sub-contractors, said that he carried out a test on the earthing installation in July last year. The test was satisfactory. He added that he thought the earthing rod, which was not installed by him, had been there since February, 1954. Mr. Charles Whitby, counsel for Tersons, who pleaded not guilty, maintained that the company had taken adequate precautions.

The magistrate, Mr. Frank Milton, stated, 'All the evidence shows that Tersons proved themselves anxious to co-operate when the matter was brought to their attention. They are legally responsible, but they may well feel the sub-contractors are the people morally responsible.'

IAAS

Election of Officers

AT a meeting of the Council of the Incorporated Association of Architects and Surveyors held at national headquarters, 29, Belgrave-square, London, on April 13, Mr. Walter B. Bond, FIAS, FRICS, of Birmingham, was elected president of the Association in succession to Lt.-Col. A. E. Henson, FIAA&S, FRIBA, who, in recognition of his services to the Association, was made a life vice-president.

Mr. F. J. Meekins, FIAS, was elected senior vice-president and president-elect. Mr. R. E. J. Harding, FIAS, remains chairman of Council, while Cllr. W. J. Clark, FIAS, FRSA, follows Mr. Meekins as vice-chairman of Council.

JOINT JUNIOR ORGANISATIONS

First Informal Discussion

A JOINT meeting of the Institute of Builders Licentiate Discussion Club, representative of the Junior Organisation of the RICS and members of the RIBA was held at the offices of the Institute of Builders, 48, Bedford-square, on April 11. The meeting had been arranged by the informal committee, comprising representatives of these three bodies, which was set up to establish liaison between younger members of the three organisations.

About 60 people attended, and a lively discussion on current topics and problems promised well for the success of the new venture. It was generally agreed that closer contact during training between the members of the building team was desirable, and could lead to fuller co-operation and greater efficiency in the industry. Arguments were advanced for and against elemental bills, and most of those present felt that an annotated bill would be of great value.

The chairman, MR. A. P. PERRIN, AIOB, said that he was encouraged by the success of the meeting. He hoped that further meetings of this kind would help to promote closer liaison between members of the three bodies at junior level where its results could be most effective.

PERSONAL COLUMN

MR. P. B. GORST, export manager of Ransomes and Rapier, Ltd., Ipswich, leaves England by air on May 2, for a two-month intensive sales promotion tour of the Sudan, South Africa, Portuguese East Africa, the Rhodesias, Belgian Congo, Uganda and Kenya.

MR. G. HARRIOTT, sales director of Kingston (Architectural Craftsmen), Ltd., of Hull, has been appointed managing director in succession to MR. D. W. T. BRUCE, FCA. MR. A. HOLWELL, chief estimator, has been appointed commercial manager of the company.

MR. E. A. HALE and MR. L. S. GOODBUN, contracts departments, and MR. L. HILL, supervisor of small works departments, have been appointed directors of R. Mansell, Ltd., Croydon, Surrey.

Visits to Berlin

The Joint Committee for Structural Concrete, with the support of the Royal Institute of British Architects, is organizing two visits to Berlin in connection with the architectural exhibition being held there this year. The first will be from September 13-18 and the second from September 18-23.

IN PARLIAMENT

By Our Parliamentary Correspondent

Investment in Building

THE House of Commons adjourned for the Easter recess on April 18 after a four days' debate on the Budget and two days' discussion on defence. The House will resume on April 30, and one of the first matters with which members will be concerned will be the Finance Bill which enacts in legislative form the many proposals which Mr. Thorneycroft put to the Commons on April 9.

Winding-up what has generally been conceded as the most uninteresting Budget debate of recent years, MR. THORNEYCROFT dwelt on the necessity for a high investment economy. This, he argued, was a condition of the Government's success. The Opposition had not a monopoly of belief in investment: indeed, in the years of soft and easy exports markets immediately after the war it was at least arguable that it would have been better to invest rather more.

In the coming year, and even beyond, he saw no signs of stagnation of investment. The programme in fuel and power and transport would exceed that of 1956 by about £100m. There had been some concern about the building approvals for the first quarter of this year. He did not think anyone need be too much influenced by any quarter's figures, and those were particularly variable. But even if there was a decline in building it did not mean that private investment had dropped. It probably meant that industry was putting some machines into the factories which it had already built. In general there was no ground for decrying the investment effort of the country.

Housing Policy Questions

AT question time on April 16, MR. HENRY BROOKE, Minister of Housing and Local Government, informed Mrs. Joyce Butler that he was prepared to encourage housing association development of the type envisaged in co-operative groups.

MRS. BUTLER had asked the Minister if he had considered the chapter on co-operative housing in the United Nations Economic Commission for Europe publication *European Housing Progress and Policies*, 1955, and if he would make a statement on the possible increased development of co-operative housing in Britain.

'My attention has been drawn to this publication,' MR. BROOKE said. 'While the initiative must rest with those wanting to establish co-operative groups I am prepared to encourage any housing association development of this kind.'

MRS. BUTLER asked if the Minister had noted that co-operative housing in many countries in west and northern Europe had increased considerably since the war, and that it was clearly Government policy in those countries to encourage co-operative housing. Would he take a similar initiative in Britain?

MR. BROOKE said that he thought he had given a friendly reply to the question. If Mrs. Butler would read the publication she would see that it pointed out that co-operative housing projects had developed more widely in countries which had made less provision for public housing than Britain had.

Temporary Houses on Open Spaces

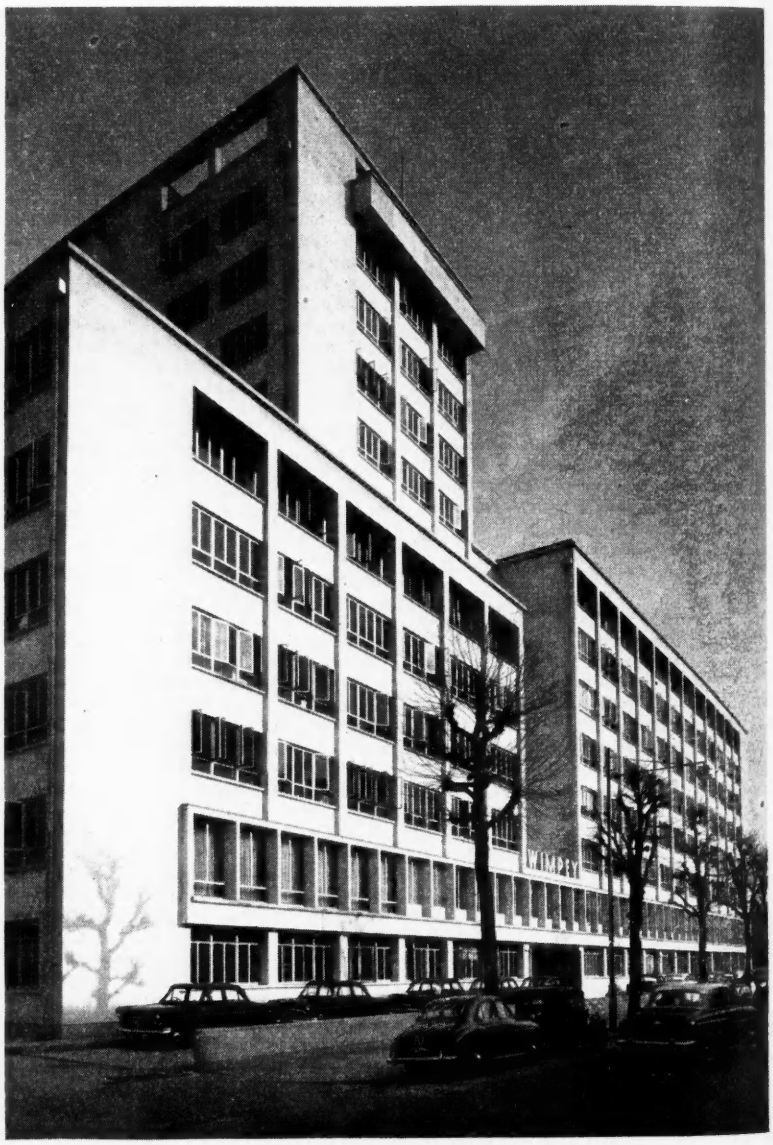
MRS. BUTLER asked the Minister of Housing and Local Government what reply he had sent to the letter from the Wood Green Council asking him to consider allowing local authorities to retain temporary houses on open spaces for a further period beyond that specified in the Housing Repairs and Rents Act, 1954.

MR. BEVINS, Parliamentary Secretary, Ministry of Housing and Local Government.—The Minister has informed the council that he would be averse to any further extension of the period for which temporary houses are allowed to occupy land taken from open space; and that he has no amending legislation in mind.

Essex Development Plan

MR. BRIAN HARRISON asked the Minister whether he had yet approved the Essex Development Plan.

MR. BROOKE: I have nearly completed my consideration of the plan, but as explained on February 26, the maps will require revision before the plan can be formally approved. Lists of corrections and proposed modifications to most of the town maps have already been given to the county council, whose officers have started the revision; but this is bound to take some time. MR. HARRISON asked if the Minister could expedite this matter as the entire future planning of Essex was being delayed until the plan was approved.



BUILDERS' OFFICES, HAMMERSMITH.—The new offices for George Wimpey & Co., Ltd., are sited on the contractors' yard established by George Wimpey in 1880. Designed by E. V. Collins, ARIBA, chief architect; principal assistants, G. C. Goldman, ARIBA, and F. G. Norman, ARIBA. Heating and ventilating consultants were Hoare, Lea & Partners

MR. BROOKE said that he did not say his formal approval of the plan could be made in a few weeks. He had pointed out that the maps required revision, and he was as anxious as Mr. Harrison to get the plan completed.

Overspill Difficulties

MR. AWBERY asked the Minister if he was aware of the difficulties being experienced by large cities that were unable to accommodate their increasing populations within their boundaries and where the surrounding areas were willing to assist by taking them in, but unable financially to provide the houses, roads, and sewers because of the smallness of the grant and heavy interest charges; and what action was being taken to deal with this problem.

MR. BROOKE: Exchequer grants towards schemes for relieving congestion in the big cities are by no means small. They amount to 50 per cent. of the cost of water and sewerage works, in addition to a subsidy of £24 a house a year plus, in some cases, a further £8 at the outset. Several local authorities have in recent months agreed to undertake schemes for this purpose, and I believe that negotiations now proceeding will result in further agreements.

MR. STOKES asked if the Minister had examined the high cost of land, which, he suggested, was one of the biggest obstructions of all.

MR. BROOKE said that it was certainly not an obstruction to town development as far as he was aware.

Acquisition of NCB Land

MR. MCKAY asked the Minister whether he had fully investigated the question of the Gosforth Council acquiring land from the National Coal Board for housing purposes, then selling the land to private builders and using the Housing Revenue Account to compensate the National Coal Board. He also asked from what source under the terms of the agreement compensation was payable to the Board.

MR. BROOKE: These transactions have been perfectly regular and straightforward. Some years ago the council bought for housing purposes land in which the National Coal Board had extensive leasehold interests. Payment of compensation for those interests is part of the cost of acquisition and is, therefore, a charge on the housing revenue account. Some of the land thus acquired proved to be surplus to the council's requirements and was, with the consent of my predecessor, recently sold to a private builder. The money from the sale would, of course, be credited to the account, and can therefore be used, with my consent, towards payment of the outstanding liability to the board. I have given my consent to the application of a first instalment of this money to this purpose.

MR. MITCHISON asked if the reluctance of the council about building houses on this land had anything to do with the removal of housing subsidies.

MR. BROOKE said that that was a difficult question. As far as he knew it was agreed policy.

Private Street Works Loans

MR. BRAINE asked the Minister if, in view of the large number of unmade roads in the Benfleet urban district and the difficulties of drainage peculiar to that area, he would give sympathetic and early consideration to the authorisation of loan consent for the making-up of such roads where deposits had been duly made in accordance with the New Streets Act, 1951, and petitions had been received from the frontagers concerned.

MR. BEVINSH Yes. The Minister believes that the council can be relied on, while the present need for strict economy continues, to put forward only proposals where work is needed urgently; and accordingly he does not anticipate any difficulty.

Nuclear Power Stations and Public Inquiries

MR. BRIAN HARRISON asked the Paymaster-General to what extent plans for the switchgear necessary to utilise the electricity generated by the nuclear power station at Bradwell on Sea were submitted at the public inquiry held to decide the siting of this station.

MR. DAVID RENTON, Parliamentary Secretary, Ministry of Power, replying on April 15: No plans either of the proposed nuclear power station or of any switchgear were submitted at the inquiry which took place before tenders had been received.

MR. HARRISON said that it was a disgraceful state of affairs because about 17 acres were to be occupied by the switchgear and were to be built on in addition to the station, consequently altering the original plans approved by the inquiry.

MR. RENTON said that he did not think there was anything disgraceful about this. The inquiry was to enable the previous Minister to decide whether there should be a power station at Bradwell, and the switchgear was a separate item connected with transmission.

MR. HARRISON also asked the Paymaster-General if he would give a general direction to the Central Electricity Authority to review their arrangements for co-ordinating the work of those branches of the Authority responsible for providing generating plant and those responsible for distributing electricity.

MR. RENTON: No. This is an internal matter for the Authority.

MR. HARRISON suggested that it was disgraceful that one should get planning approval for a building like this and then a subsidiary building had to be erected which was not considered in the original planning. It was essential that there should be some co-ordination within the Central Electricity Authority.

MR. RENTON said that there was co-ordination, and there was no strong evidence of a lack of it.

OTHER BUSINESS

Schedule A Taxation

SIR GUY LLOYD asked the Chancellor of the Exchequer if he would introduce legislation to reassess the value of property for the purposes of income tax (Schedule A).

MR. PETER THORNEYCROFT, in a written reply on April 15, stated: I do not propose to introduce such legislation this year, but, as I announced in my Budget statement, the Finance Bill will include provisions to deal with the effects on Schedule A liabilities in Scotland and Northern Ireland of recent changes in their rating laws.

LOANS TO LOCAL AUTHORITIES

Housing Minister's Authorisations During 1956-57

THE following details have been issued of loans sanctioned by the Minister of Housing and Local Government to local authorities in England and Wales during the quarter ended March 31, 1957 (to nearest £1,000):

	£'000	£'000
Housing (land, dwellings, roads, sewers, &c.)	58,604	
Advances and Grants under Housing and SDA Acts	17,098	75,702
Town and County Planning		1,159
Sewerage and Sewage Disposal	4,280	
Water Supplies	3,899	8,180
Burial grounds and cemeteries	42	
Coast protection	45	
Crematoria	84	
General depots	97	
General markets	25	
Land for the benefit, &c., of the district	181	
Physical training and recreation	41	
Private street works	250	
Privy conversion	17	
Public baths and washhouses	122	
Public conveniences	35	
Public libraries and museums	52	
Public walks and pleasure grounds	77	
Refuse collection and disposal	273	
Street cleansing	14	
Town halls and offices	285	
Miscellaneous	189	1,837
		86,879

ROAD HAULAGE SURCHARGE

Two-thirds Reduction Recommended

AT A MEETING in London on April 17 the national rates committee of the Road Haulage Association recommended to members a reduction of two-thirds in the emergency surcharge which took effect in December last.

The surcharge was applied on account of increases in the price of liquid fuel, which included an extra shilling on the tax. The reduction is made possible by the removal of the shilling in the Budget, which took effect as from April 15.

A number of other alterations in costs have taken place during the past few months, and an announcement is expected soon from the Minister of Labour giving a date for payment of increases in the basic wages of road haulage workers.

The rates committee will meet again shortly to consider the effect on rates of these changes in costs.

HAULAGE RATES

Removal of Fuel Surcharge

THE LONDON MASTER BUILDERS ASSOCIATION and the Southern Counties and Eastern Federations of Building Trades Employers, announce that the temporary surcharge on the haulage rates (Schedule O) in their Schedules of Charges and Hire Rates for Dayworks for use with the National Schedules of Daywork Charges, which came into operation on December 31, 1956, will cease to apply after April 28 next.

BUILDING MANAGEMENT CONFERENCE

More Research and Incentive Schemes Advocated

THE Institute of Municipal Building Management held a conference at Beatrice Webb House, Dorking, from April 6-7. The members met to consider the numerous aspects of the cost of maintaining the three and a half million dwellings now owned by local authorities.

In addressing the conference, MR. W. J. RAINERS, BSc., of the Building Research Station, Department of Scientific and Industrial Research, said the average annual cost of maintaining a normal council house, excluding decorations and special repair, was £6 6s. The average cost of carrying out internal decoration was £2 per house. For external painting the cost was £2 1s.

The cost of maintenance repairs to dwellings erected under the 1919 Housing Acts was £10 5s. per house compared with £3 5s. for post-war traditional houses. Other houses built between the wars, apart from those constructed under the Acts, took, on average, £8 4s. per annum for maintenance works. It was pointed out that the whole object of maintenance repairs to dwellings was the preservation of a national capital asset—a reasonable estimate of the capital value involved was £5,000m.

From the discussion which followed it was apparent from this particular aspect of maintenance that continued research was required, on a national scale, in order to make available to all concerned the best methods of carrying out repairs, using materials, and applying incentive bonus schemes. It was thought that it would be to the advantage of local authorities to contribute a sum of, say, one shilling per house yearly, to provide funds for such research.

On incentives, members considered a paper describing the successful operation of a maintenance bonus scheme used by the Bermondsey Borough Council which had resulted in a greatly increased rate of production from the operatives. Work was being carried out at present in a fifth less time than was taken in 1939. This represented a saving of 4d. a week on the rent of each dwelling owned by that council.

Members were able to confirm similar experiences where schemes had been introduced with surprising reductions in the total manpower required and corresponding reductions in the cost of work. It was agreed that widespread adoption of such incentive schemes, together with research, could substantially reduce the national bill for the maintenance of properties and as a natural corollary maintain the value of these properties as a national asset.

LMBA

Minister's Message to Accident Prevention Conference

IN ANTICIPATION of its Accident Prevention Conference, which takes place in the hall of the Royal Empire Society next Friday afternoon, May 3, the LMBA has received the following message from the Minister of Labour:

I warmly welcome the initiative taken by the London Master Builders' Association in calling this Conference as part of a campaign to reduce the number of accidents in the building industry.

Accidents cause injury and death. They result in human suffering, lowered production and increased costs. The accident record of the building industry is not a good one. It is as much in the interests of the industry as it is in the national interest that there should be fewer accidents.

I hope that this conference will be successful in bringing the attention of the Association's member firms to this problem and in encouraging them to tackle it.

(Signed) IAIN MACLEOD.

NEW PLASTERING TECHNIQUES

Team to Study US Developments

A TEAM of plastering contractors, led by Mr. A. C. V. Telling, president of the National Federation of Plastering Contractors, is to visit the United States from May 7 to 29.

Among the subjects the team hopes to study are new developments in mechanisation in plastering; the use of new materials; heating installations in relation to plastering work; estimating and management; contract procedure and the system of training plasterer craftsmen in the USA.

The itinerary covers New York, Chicago, St. Louis and Washington, where meetings, visits, and so on are to be organised by the Contracting Plasterers' International Association, the American organisation of plastering contractors.

The team, all members of the NFPC, will comprise Mr. A. C. V. Telling (A. C. V. Telling (Bristol), Ltd.); Mr. H Humber (Bruce Martyn, Ltd.); Mr. A. R. Ball (A. R. Ball & Co., Ltd.); Mr. E. T. Roberts (W. J. Roberts & Son, Ltd.); Mr. J. S. Cothliff (J. S. Cothliff, Ltd.), and Mr. F. W. Heaton (F. W. Heaton (Builders), Ltd.).

BOOK

DRY STONE WALLING. By Col. F. Rainsford-Hannay, CMG, DSO. Pp. 109. Illustrated. (London: Faber and Faber Ltd.) Price 21s.

THIS little book on a traditional and highly technical craft is the work of an amateur who has long studied the subject. Although he takes Galloway as the chief British centre of the craft he describes its local variations elsewhere in Scotland, in the Isle of Man, Ireland, Wales, the Pennines, the Lake District, the Cotswolds, Devon, Cornwall, and even outside Britain. Dry stone walls are mentioned in the Old Testament, and the massive 'brochs' of the Shetlands are 1,600 years old. The author however, regards dry stone walls as economical and highly 'functional' to-day. Their chief function is to prevent incredibly agile sheep from leaping over them on to cultivated ground; and much structural ingenuity is required from the waller to solve this problem. A considerable glossary of craft-terms used in Scotland, several clearly drawn sections of various types of wall, and many photographs add to the value of an interesting and unusual book.

MARTIN S. BRIGGS.

NEWS IN BRIEF

Spray Taps Demonstration

SPRAY tap experiments carried out by the Building Research Station in conjunction with the Ministry of Works on a large office building in London halved the normal fuel and water consumption, and the Ministry has decided to demonstrate the installation at this year's Health Exhibition, to be held at Folkestone from April 30 to May 3. The spray taps fitted in the London building delivered four to five pints of blended hot and cold water a minute, against the normal 28 pints, giving an estimated saving of half a million gallons of water and 27 tons of coke a year. The simpler installation is cheaper all round and certainly more hygienic. The users voted in favour of it. The MoW has also been experimenting with caustic soda as a sterilent in chemical closets, and has evolved an automatic method of maintaining sterility—thereby safeguarding water-gathering grounds from pollution. This equipment will also be shown at the Health Exhibition.

Portsmouth Conference

The City of Portsmouth College of Technology is to hold a regional conference for members of the building industry and associated professions and occupations, and for teachers of building, architecture and related subjects, on June 15. Subject for the conference to be held at the college, is 'Planning and Organisation.' Chairman will be Mr. E. G. Llewellyn, FIOB. Speakers are Mr. E. U. Broadbent and Mr. Stanley Reynolds.

Builders' German Tour

Thirty-four members of the South-West region of the Federation of Master Builders have returned after a five-day visit to West Germany. They were impressed at the speed with which the Germans have reinforced their economic standing and their keenness in replanning and rebuilding.

The visit took place at the invitation of the North Rhine Master Builders' Federation and covered the three industrial centres of Dusseldorf, Cologne and Bonn.

At a luncheon given in Bonn in honour of the visitors, Mr. H. D. Cassini, of Western Estates (Lawes Cherry), Ltd., Cheltenham, Glos, and vice-president of the Federation, presented a gavel and block to the president of the North Rhine Master Builders.

A Handbook of Softwoods

'A Handbook of Softwoods,' issued recently and published by HMSO, price 8s. 6d., provides up-to-date information on the characteristics and mechanical properties of a range of home-grown or imported softwoods and gives a full description of 49 timbers and describes briefly another six.

The information given is based on published material and on investigations made at the Forest Products Research Laboratory or similar establishments. The publication is complementary to the recently published 'A Handbook of Hardwoods.'

Building Societies Institute

Mr. W. F. Coventry, assistant general manager of the Co-operative Permanent Building Society, has been elected president of the Building Societies Institute.

The Heating of Buildings by Warm Air

'GROWING POPULARITY IN GREAT BRITAIN'

FROM a paper on this subject given by Dr. W. Davidson, MIHVE, MInstGasE, MInstF, at a meeting of the RICS recently, we take the following extracts:

Although the heating of buildings by warm air has been widely practised abroad, particularly in the United States of America, this method has not until recent years found favour in Great Britain. The reasons for this reluctance to follow trends in other countries are well known. In the past, coal was plentiful and cheap, labour costs low, and particularly in the domestic field there has been a very strong attachment to the open fire. Low standards of heating were accepted without question and were even applauded by the spartan section of our community. Our wasteful use of fuel has been so great that the consumption per household has been higher than for other countries, where comfort standards are higher and winters more severe.

There is, however, in this country an increasing desire for greater comfort, and no longer is it considered healthy to have ice-cold bedrooms, draughty halls, and unevenly heated living-rooms. Higher comfort standards are also demanded in our offices, factories, schools, churches, etc.

To attain these improved standards, the fuel consumption need not be increased—in fact, the national economy requires that it should be reduced. It is imperative, therefore, that the effectiveness of our heat services be greatly increased. This demands attention not only to the heating methods but also to the building structure. Here the heat losses can be substantially reduced by adopting a good standard of insulation, and by reducing over-ventilation and eliminating draughts.

Insulation of Structure

During the last ten years there has been a greater appreciation of the value of insulation. The Egerton Committee (Post-war Building Studies No. 19) and the work of the Building Research Station have shown clearly that we cannot afford to continue to build to pre-war standards of insulation. By adopting their recommendations, a reduction of at least 25 per cent. can be made in the heat losses from the building.

This Egerton standard of insulation can be obtained in a variety of ways (Nash, Comrie and Broughton—"Thermal Insulation of Buildings"—HMSO, 1955). The most usual method for insulation of housing is to provide:—

(*a*) walls—inner leaf of 4-inch lightweight insulating block in place of 4½-inch brick of normal 11-inch cavity wall (sealed cavity);

(*b*) ground floor—(i) concrete slab with tile finish, or preferably with wood block or cork covering; (ii) alternatively, where board and joist floor, lay insulation quilt over joists before fixing boards; and

(*c*) roof—loose fill of insulating material between joists or insulating quilt over joists.

The cost of providing this standard of insulation for a house of 1,200—1,500 square feet total floor area will vary from nothing up to about £100, depending upon the materials chosen, their availability locally and the skill of the building operatives in their use.

It is equally important to adopt a good standard of insulation when building schools, churches, halls, etc., but progress here is slower.

The additional advantages of insulation, particularly for buildings where the occupational periods are highly intermittent and short, are not always appreciated. Since light-weight materials are used, the inner surfaces of the outer walls, ceilings and floors have a reduced thermal capacity and heat up more quickly and to higher temperatures than obtained with the traditional constructions of lower insulation standard. Bedford in his paper 'Comfort in the Home' presented to the Institute of Fuel Conference, May, 1956, stated that in cold weather with a room temperature of 68deg.F. the temperature of the inner surface of the insulated wall was 6deg.F. higher than for the traditional wall—giving therefore an increased feeling of comfort and dispelling that chilly feeling that is given by cold walls, even though the room air temperature is satisfactory.

Ventilation rates, particularly in our homes, have been much too high, causing discomfort, considerable loss of heat and waste of fuel. This over-ventilation may be reduced by weather-stripping the outer doors, omitting air bricks in the bedrooms and reducing the throat of the open-fire flue (and closing it when the fire is not in use). In this way a reduction of 15 per cent. of the heat losses from the house is obtained and this, coupled with the 25 per cent. reduction obtained by insulation to the Egerton Standard, gives an overall reduction of just over one-third.

The Heating System

The greatest contribution towards increased comfort standards with reduced fuel consumption can, however, be made by burning the fuel more efficiently and utilising the heat produced more effectively. The present paper describes appliances operating at efficiencies up to 80 per cent., while the warm-air systems examined provide high comfort conditions with maximum economy of fuel and labour.

The application of warm-air heating to houses, schools, halls, etc., is discussed and installations are described.

When considering the application of the warm-air system in this country, much can be learned by a study of its development in the United States, provided there is a full appreciation of the difference in conditions of use and requirements in the two countries.

The earlier American systems provided gravity circulation of warm air from a heater placed in the basement to high level registers in each room, while air was returned through low-level grilles. Later, fans were used in the system to give increased discharge velocities and the vertical temperature gradients were reduced to an acceptable level in basement houses where there was an appreciable conduction of heat from the warm basement through the living-room floor.

For houses without basements, which are normal in this country and becoming so in the United States, this system gave uncomfortably high vertical temperature gradients (15 deg.-20 deg. F. difference from floor to ceiling) and causing discoloration of the ceiling.

The low-level warm air discharge system was therefore a natural development to meet conditions in this country, and is becoming widely adopted in the United States.

Mention should also be made of the perimeter system recently introduced in America, particularly for single-storey houses with solid floors. In this, air is carried from the base of a centrally-placed heater through radial ducts to a perimeter duct and finally through floor registers to each room. The ducts are formed as uninsulated channels in the concrete floor, but insulation is provided round the edge of the floor slab to reduce the heat loss to the ground. When the heating is first switched on, the temperature drop through the ducting is high, much heat being dissipated to the floor slab. After some hours, the slab becomes warm and warm air is discharged from the registers. At this stage approximately 20 per cent. of the heat supplied to the room is from the floor slab and

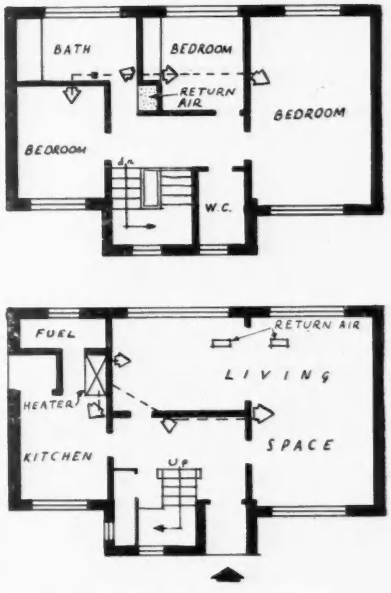


Fig. 1.—Typical lay-out of warm-air installation in a small house

80 per cent. from the warm air discharged into the room. Excellent temperature distributions with very low vertical temperature gradients are obtained in each room.

The perimeter system is gaining popularity in the United States, but it will be remembered that in many parts of that country outside temperatures remain at a very low level for extended periods, making it desirable and often essential to provide heating throughout the night.

With Britain's more temperate climate, intermittent heating is acceptable and, with the correct choice of heating system, more economical. Moreover, the rapid fluctuations of outside temperature which often occur in winter call for maximum flexibility, a special feature of the forced warm-air system with low-level discharge as developed for use in this country.

A Typical Domestic Installation

Fig. 1 indicates a domestic installation where warm air is ducted to all rooms from a heating unit placed just off the kitchen. By means of a fan, air is drawn from the living space through ceiling grilles into the joist space and thence to the heater. A third grille on the landing returns air from the first floor. This air is passed through the heating unit and warmed to a predetermined temperature 140 deg.-145 deg. F. Part of the warm air is discharged from the back of the heater to the dining space, part from the base of the heater through well-insulated and waterproofed ducting formed in the concrete floor slab to registers in the hall and sitting space, and the remainder from the top of the unit through lagged metal ducting (fitted between the joists) to registers in the bathroom and bedrooms. In each case the registers are placed just above the skirting board and the warm air is discharged at velocities of 250 to 350 ft. per minute and temperatures of 120 deg. to 145 deg. F.

The chief features of the system are:—(a) Uniformity of temperature distribution, (b) Flexibility and ease of control, (c) Elimination of stuffiness, (d) Freedom from local discoloration of decorations, (e) Unobtrusiveness and space-saving, (f) Smokelessness, and (g) Freedom of planning.

Partially-ducted and Non-ducted Warm-air Systems

The ducted-air system of whole-house warming described has been applied mainly to higher- and middle-income group housing, but attention has recently been given to the provision of partially-ducted and non-ducted systems for the smaller house of 750 to 1,000 sq. ft. total floor area. These simpler systems are designed to provide full heating to the living-rooms, and background heating to the bedrooms by discharging warm air to the hall and allowing it to spill over to the landing and bedrooms through partly open doors. In the open type of plan where the stairs lead off the living-room, the non-ducted warm-air system can provide full heating to the living-room and background heating to the bedrooms by spill-over. With each of these systems, topping-up to full comfort temperatures in the bedrooms is most conveniently provided as desired by gas or electric fires.

Non-domestic Installations

As for domestic heating, warm-air systems vary widely in design, but the installations described employ the low-level discharge and high-level return principle found effective for domestic installations.

A wide range of different types of building have now been successfully heated and these include schools, school extensions where the existing plant could not meet the additional load, shops, churches, chapels, flats, clinics, offices, etc. In these, the heaters have been placed in different parts of the building, thus dispensing with a boiler house, eliminating distribution 'losses,' speeding up heating and providing simple zoning of the installation.

[In the concluding part of his paper, the lecturer described in some detail a virtually ductless gas-fired installation at a school designed by the Essex County Architect's Department (Chief Architect Mr. H. Conolly, CBE, FRIBA), also a gas-fired installation at a church. He gave particulars, too, of solid-fuel and oil-fired appliances together with details of fuel consumption, etc. There were several diagrammatic illustrations, including the one reproduced.]

There can be no doubt, concluded the lecturer, that a marked change is taking place in our heating methods, particularly in our homes. An increasing number of people are realising the value of convection heating and those who have had experience of the warm-air system of whole-house warming find it no hardship to give up the open fire.

It is suggested that as fuel prices rise so will the popularity of the warm-air systems increase because of their ability to give a high standard of comfort when and where required with maximum economy of fuel and labour. There is no need to heat the whole house or building if only part of it is occupied and no need to maintain wastefully high temperatures overnight or during unoccupied periods. Further, uniform temperatures are maintained in the "occupied" part of the room (from floor to five ft. level) and fuel is not wasted and discomfort caused by providing excessively high temperatures at ceiling height.

Finally, to reduce the fuel consumption to a minimum and to take full advantage of the marked degree of flexibility of the warm-air system in giving quick heating-up rates, it is important to provide a well-insulated structure, having low thermal capacity linings on the inner surfaces of the outer walls, ceilings and floors.

BOOKS RECEIVED

A HANDBOOK OF SOFTWOODS. (London: HMSO.) Price 8s. 6d.

BUILDING BYELAWS. POCKET BOOK. By Edgar Lucas. (London: George Newnes, Ltd.) Price 12s. 6d.

BOOKS

⁂ *Books reviewed in these columns may be obtained on application to the Book Dept., 'The Builder,' 4, Catherine-street, Aldwych, WC2. Cash (which should include 1s. to cover postage and packing) should accompany the order.*

HISTORY OF BUILDING: VOL. II. By F. C. Horstmann, ARCA. Pp. 143. Illustrated. (London: Sir Isaac Pitman and Sons, Ltd.) Price 9s.

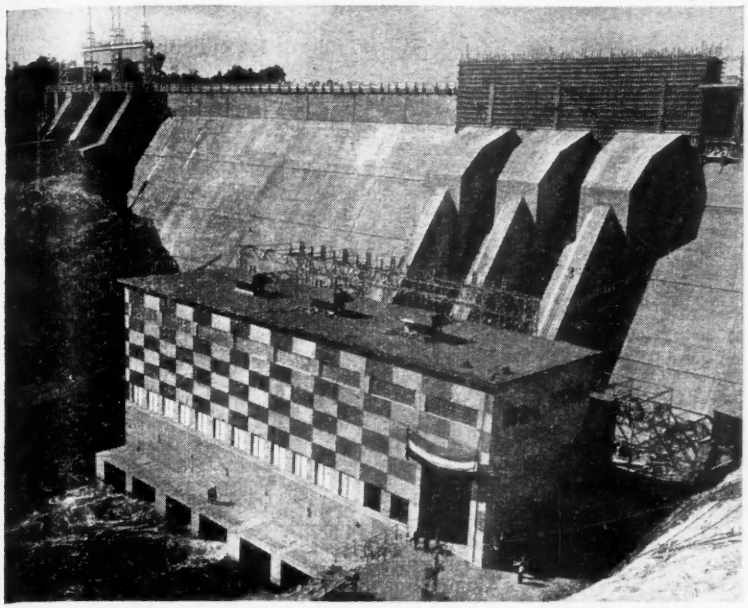
A PREVIOUS VOLUME carried the story to 1800; this one continues it to the present time. It is intended, we are told, for 'building students and apprentices.' Only one chapter is concerned with 'technical developments'; and a quarter of the text is devoted to 'the political and social background.' In so short a book this might well have been abbreviated, for many of the events mentioned had no influence upon architecture or building. The remaining space is occupied by a condensed history of the architectural revivals during the 19th century, and subsequent efforts to develop a contemporary style. The complicated story of the numerous changes of fashion is well related; though some words and ideas may puzzle young readers, e.g., 'nostalgic,' 'heavily escapist romanticism,' and 'overprecious.' The facts are generally accurate, but Norman Shaw should not be blamed for Wormwood Scrubs. Sezincote was designed by S. P. Cockerell, not by C. R. Cockerell; 'Sir Robert Smith' (p.37) should be 'Robert Smirke'; the names of C. R. Mackintosh and C. H. Townsend are wrongly spelt; 'Professor Paul Reilly' should be 'Professor C. H. Reilly'; and the younger 'Sir G. G. Scott' should be differentiated as 'Sir Giles Scott.' The numerous line drawings are clear, that of the Pavilion at Brighton being excellent.

MARTIN S. BRIGGS.

MASONRY SIMPLIFIED: VOL. I, TOOLS, MATERIALS, PRACTICE. By J. R. Dalzell and G. Townsend. Pp. 463. Illustrated. (London: The Technical Press Ltd.) Price 45s.

THE AUTHORS of this well-produced American textbook are a 'building specialist' and a practising architect respectively. First published in 1948, it now appears in a second edition. In America, the term 'masonry' includes brickwork, concreting and paving, as well as working in stone; and the only mention here of masonry as we understand it is a brief reference to flagstone paving. Limes, cements and mortars occupy 60 pages; concrete and 'concrete masonry,' 100 pages; 'brick masonry,' 60 pages; structural tiles, 56 pages; pavings and steps, 44 pages. There is also an excellent 'illustrated dictionary of building terms' (96 pages), which covers all the building crafts. This section shows many differences between American and British terminology; but in practice there is a good deal of similarity, from 'Old English Bond' onwards. Most of the joints used in woodwork are also familiar friends. This book should enable British readers to obtain suggestive ideas from current American practice.

MARTIN S. BRIGGS.



Douglas fir 'utility' panels were used as shuttering on the main dam and power house at Stewartville, Canada. The chequerboard effect on the face of the power house, produced by shuttering composed of alternate panels of smooth and striated plywood, can clearly be seen

NEW ROLES FOR PLYWOOD

From a Correspondent

WITHOUT in any way yielding their essential position in the cabinet makers' trade, panels of laminated veneers have now invaded many regions of 'rugged' construction work.

Not long ago plywood was considered to have found its ultimate place in the manufacture of fine furniture, wall panellings, and similar applications where the rich qualities of sliced hardwoods and textured softwoods contributed much to the art of the furniture and cabinet maker's craft. Now plywood, specifically Canadian Douglas fir plywood, has added a rôle of tough utility to its versatile list of uses.

This has been brought about principally through the development of waterproof phenolic resin glues that bond plywood veneers permanently against the heaviest possible moisture conditions.

This quality of absolute water resistance coupled with Douglas fir plywood's additional advantages of a low strength-weight ratio, broad surface area, extreme flexibility and ease of handling, immediately suggests many construction uses and projects that have been served traditionally by steel or galvanised iron.

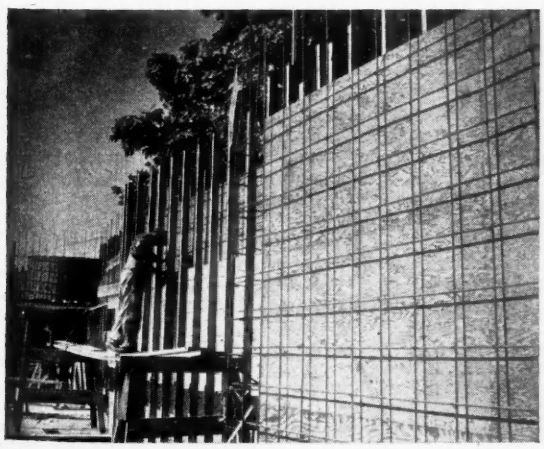
These 'utility' grades of Douglas fir plywood have found increasing use in any form of construction where strength, rigidity, and low cost are prime considerations. The list of uses to which these grades have been applied is rapidly increasing. Some of these include: roof decking or sarking, underlay for floors to be finished with linoleum, tiles, parquetry, carpeting, etc., laminated plywood trusses, farm structures, concrete shuttering (where panels can be re-used a score of times and then applied permanently for other purposes), packing cases, industrial pallets, and so on.

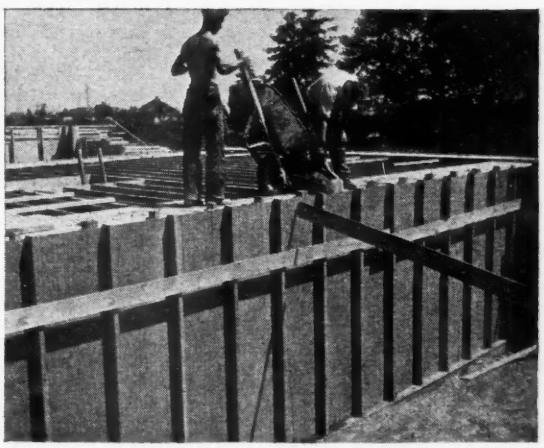
Apart from appreciable savings in cost the advantages of these light, very strong, 32 sq. ft. panels cannot easily be disregarded. If one man can cover a 32 sq. ft. area with one panel and fasten it with fewer nails, with the assurance of a smooth uniform result superior to traditional forms of sarking or shuttering, the reduced time and labour factors can be significant.

The architect can obtain the intricate shapes and complex curves, typical of modern construction, by the simple application of flexible plywood panels, and the unskilled user can fashion them into sheds, farm shelters, flumes and the multiple projects of farm and home, with the use of a few simple tools.

These types of utility Douglas fir plywoods have had some years of proving on the North American continent where they have been used with success in the heaviest types of construction. Now they are obtainable for the same purposes in this country.

In British Columbia much research has gone into this kind of plywood application, and a number of pamphlets and other literature have been produced describing technical advantages and practical uses. These can be obtained by writing to the European representative of Seaboard Lumber Sales Co., Ltd., Mr. N. R. M. Morison, 1-3, Regent-street, London, SW1.





Left: One man erects the Douglas fir plywood shuttering for this large wall. When the plywood panels are stripped from the hardened concrete they may be transferred to another project, or may be moved up to successive floors of the same structure. Right: Only two men are required on this concrete shuttering project. The panels produce a concrete surface that requires little or no making good

Prestressed Concrete Construction

SOME RECENT BELGIAN EXAMPLES

PROFESSOR D. VANDEPITTE stated at the beginning of his lecture, given recently at the Institution of Civil Engineers, and promoted by the Cement and Concrete Association, that he would discuss structures that were representative of the general trend of prestressed concrete constructions in Belgium or that presented some unusual feature. Professor Vandepitte was associated with all of the schemes described at some stage of either their design or construction.

Bridges at Ghent

Details were given of three bridges that are being built over the route of a projected canal, the Ringcanal, which will surround Ghent almost completely. The bridges also span roads that follow the canal banks.

The decks of the bridges are supported on eleven continuous prestressed concrete beams that are supported on reinforced concrete intermediate piers, 14 in. thick, and on reinforced concrete stepped abutments of the Christiani and Nielsen quay-wall type. The piers and abutments are founded on precast reinforced concrete piles. Freyssinet-type hinges are formed at the junction of the beams and piers, and roller bearings are installed at the abutments.

The prestressed concrete beams are 5 ft. deep at the centre of the main 170 ft. span and at the ends, and 9 ft. deep above the intermediate supports. Prestress was applied on the Magnel-Blaton system by external polygonal cables; each cable consists of 104 wires of 0.276 in. diameter embedded in a mortar-filled sheath which passes from the solid end-blocks through the transverse diaphragms between beams. The path of the cables rises close to the deck slab over the intermediate piers and descends to the level of the lower edge of the beams at the middle of the centre span. The wires of each cable form a single group in the centre span and divide into two groups of 56 and 48 wires in the side spans. The two groups are anchored at different levels.

Bridge Over the Scheldt

The bridge, 260 ft. long overall, is again a continuous structure with a centre span of 186 ft. and two small end spans of 37 ft. Thin reinforced concrete walls support the bridge on the intermediate piers; Freyssinet-type hinges are included at the base of one of the walls and at the top and bottom of the other. Special end supports were necessary because the ratio between the span lengths is such that, whatever the position of the live load, the force exerted by the superstructure will always react upwards. For the support prestressed concrete anchors were designed to be connected to reinforced concrete slabs loaded with sand, each anchor has two flexurally weak sections and thus functions as a movable support. Prestress was applied to the anchors on the Magnel-Blaton system by 40 wires, the wires passed through a precast concrete column of rectangular cross-section. The column, after prestressing, was encased for the greater part of its length in precast concrete cylinders filled with *in situ* concrete. The lower end was anchored by reinforcing rods; at the upper end the prestressing wires were looped inside an *in situ* concrete 'button.' The end block of the superstructure was then formed around the button.

The superstructure of the 39 ft. wide bridge consists of four beams, 6 ft. 7 in. deep at the centre and ends of the bridge and 8 ft. 8 in. deep over the intermediate piers. The two pairs of beams are connected by 6 in. reinforced concrete slabs to form two box girders 11 ft. 6 in. wide under the carriageway. Footpaths, 10 ft. 5 in. wide, cantilever beyond the carriageway slab. Prestress was applied within each box girder by means of eight Magnel-Blaton cables of 56 wires, which were installed in a mortar-filled sheath.

After prestressing of the superstructure and removal of the falsework, the pull in each anchor will amount to 35,000 lb. An additional force of about 30,000 lb. will then be applied artificially to each anchor by pushing down both ends of the deck slab and blocking them in their new position. This operation was designed to decrease the permanent bending moment in the middle portion of the centre span. After completion of the bridge it will be possible, by removing precast concrete covers, to check at any time the magnitude of the pull in the anchors and to return it to its design value if necessary.

Multi-storey Garage

To help overcome traffic congestion in the centre of Brussels a six-storey building, with basement, is being built to house 700 cars. Construction is almost complete. The building is of reinforced concrete column and beam construction with prestressed concrete main beams; columns are on a grid of 19 ft. 8 in. by 50 ft. Each main beam, 50 ft. 4 in. long, is composed of eight factory-precast blocks; joints between blocks are mortared and the whole is prestressed together. The cross-section of the end blocks is rectangular, five of the other blocks are I-shaped, and two special blocks are provided at the intersections of the main and secondary beams. Magnel-Blaton cables of 20 wires were used to apply the prestress. The cables were threaded through holes formed in the end blocks and were located one on either side of the web of the beam. They were embedded in mortar after prestressing. After removal of the scaffolding *in situ* concrete was placed to form the secondary beams and 4 in. floor slabs.

Professor Vandepitte continued by stating that the use of external cables, as in the structures described, had one major disadvantage: the absence of bond reduces the ultimate load capacity of the beam. This was largely offset, however, by the ease of construction and by simplified maintenance and inspection at later dates. He continued by outlining an entirely new concept for the design of prestressed concrete suspension bridges. In the design of normal continuous three-span prestressed concrete beams, where live load is small with respect to dead load, the depth of beam must frequently be increased beyond load requirements to accommodate the cables. By installing the cables some distance below the lower level of the beam and using vertical struts between the cable and the concrete, a smaller prestressing force, and hence a cheaper cable, is possible. Practical restrictions on this scheme are the need to increase the height of the bridge deck above its surroundings, and the importance of a lateral bracing system for the highly-tensioned cables.

Professor Vandepitte's concept overcomes these practical limitations by raising the cables above the bridge on the intermediate supports and using vertical hangers rather than struts. In this way a suspended prestressed concrete beam bridge is formed which has two important advantages as span lengths increase. First the beams have a large eccentricity, and secondly, the live load moments in the concrete stiffening girder are smaller than those in a conventional prestressed beam because of the interaction between the cable and the beam.

Suspension Bridge, Ghent

This bridge represents the first application of Professor Vandepitte's new method of prestressing in which the cables are stretched indirectly by jacks to exert the prestressing force. The bridge has a suspended central span of 183 ft. and two end spans of 59 ft. Use of the suspension design gave a saving of 8 per cent.; this figure would be considerably greater for larger spans, up to 250 and 300 ft. The cable has a dip of 13 ft. 3 in., giving a ratio to the span length of 1.14. Intermediate supports are of reinforced concrete on spread foundations; end abutments take the form of a large reinforced concrete box filled with sand. The weight of the box was designed to exceed the upward reaction.

The 27 ft. wide superstructure consists of two stiffening girders which have a constant depth of 5 ft. 3 in. throughout their length. The girders are 21 ft. 4 in. centre to centre and have a lower flange 7 ft. 6 in. wide; their top flange is formed by the deck slab. The vertical hangers from the prestressed cable are embedded at 13 ft. centres in the ends of the transverse reinforced concrete diaphragms. The superstructure is connected to one abutment by means of a Mesuager-type hinge and to the other by a free-moving pin and eye-bar joint. Each prestressing cable consists of 510 galvanised steel wires, 0.2 in. in diameter, which form a compact cylinder, 5 in. in diameter. At the end block the cables separate for anchoring purposes into three strands of 170 wires each. The entire superstructure was prestressed by pushing up the four intermediate support columns, from the deck slabs, by means of two hydraulic jacks under each column. A 14½ in. increase in height of the columns forced the cables to elongate and produced a desired prestressing force of 1,570,000 lb. in each cable. Cast steel

hinges were inserted between the columns and deck slab before the jacks were removed.

The centre span of the bridge was subjected to test loadings. A uniform load of 545,000 lb. was applied and an immediate deflection of 1.42 in. was noted. The deflection increased by 0.04 in. after one hour. A further live load—four lorries with an aggregate weight of 226,000 lb.—was then applied and an additional deflection of 0.63 in. was noted. After all test loads had been removed the bridge recovered to its initial profile and no traces of permanent deformation could be found.

Professor Vandepitte concluded by outlining the advantages of the prestressed concrete suspension bridge concept and some of its possible applications. Bridges could be built more cheaply than equivalent steel suspension bridges and the method could be used to support flat roof structures of very long span.

OFFICIAL NOTIFICATIONS

Registration of Restrictive Trading Agreements: Opening of the Public Register

THE Registrar of Restrictive Trading Agreements has announced that the public register of agreements is now open for inspection daily from 10 a.m. to 4.30 p.m. except on Saturdays, Sundays and certain holidays.

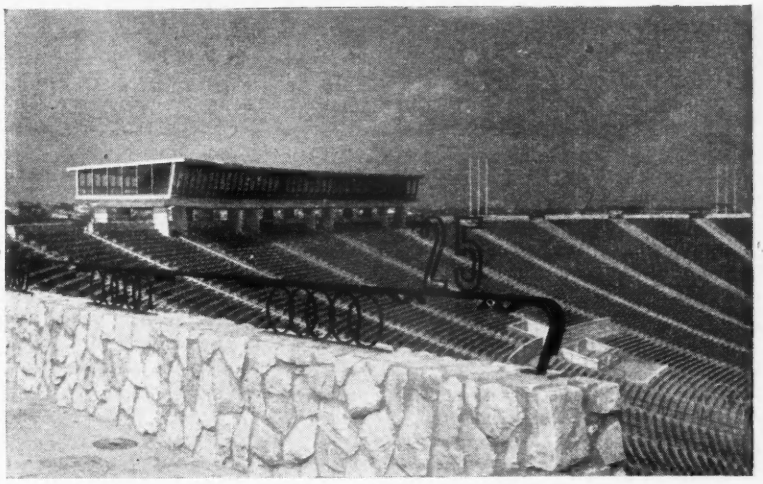
About 1,400 agreements have now been received for registration, of which over 1,100 have been delivered since February 22.

The register may be inspected, on payment of a fee of 1s. a day, in London on the 7th Floor at Chancery-house, Chancery-lane, WC2; in Edinburgh at 9, Wemyss-place, Edinburgh 3; and in Belfast at Chichester-house, 64, Chichester-street. There will be a public search room at each of these addresses, together with indexes of the commodities which are the subject of agreements on the register.

First Cases for the Court

THE REGISTER of Restrictive Trading Agreements is required by the Restrictive Trade Practices Act to take proceedings before the Restrictive Practices Court on all registered agreements; but the Board of Trade may direct him as to the order in which cases are to be taken. The Board of Trade have now directed the Registrar to take among the first cases agreements involving registrable restrictions in relation to the supply of high conductivity copper semi-manufactures, shell boilers and structural steelwork. The formal commencement of proceeding is by the issue of a Notice of Reference in respect of the agreements concerned; and Notices of Reference will be issued within the next few weeks.

The Registrar will be getting in touch very shortly with anyone he believes to be able to assist the Court with evidence about the agreements listed above. Anyone else who may be able to provide evidence from his own experience of results of any of these agreements which he thinks affect the public interest is asked to communicate as early as possible with the Solicitor to the Registrar at Chancery House, Chancery-lane, London, WC2.



Part of the west side of the stadium, showing radio and Press stand and part of upper ring walk

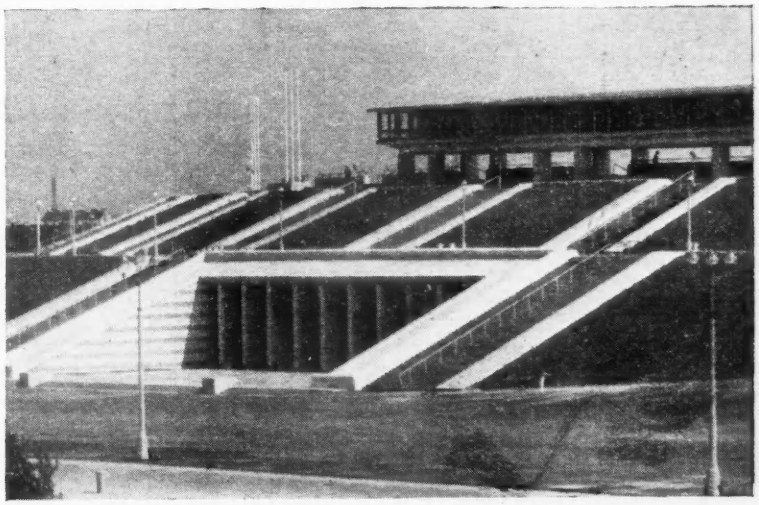
A NEW WARSAW SPORTS STADIUM

DETAILS of a new sports stadium that has recently been completed in the Praga district of Warsaw have been given in an article by Romuald Wirszyllo in the Polish publication *Architektura*. The stadium forms part of a local sports centre, and has been built up on a rubble, earth and river sand embankment, especially compacted to reduce settlement.

The chief architect for the project was Professor J. Hryniewiecki, who was selected to design the stadium following an architectural competition. In plan the stadium, which is situated near the Vistula, is nearly a circle. The arena comprises a football pitch, an athletics track and stands to serve 70,000 spectators.

The seating area is in the form of a trough. The arena which forms its floor is some 14 ft. above Vistula level. The internal ring way round the seating area is about 60 ft. above the arena. On its outer circumference the ring way is 3 ft. lower, thus providing a terrace for walking. A series of flights of steps link this upper ring way to the lower ring, which runs round the outside of the embankment. This lower ring way has an average width of 65 ft. It is raised about 6 ft. above the level of the surrounding ground by a retaining wall of random stone courses. This wall provides the natural division between the stadium and the parkland outside.

There are three subways leading into the arena. (1) The main subway, which is over 260 ft. long, 39 ft. wide, and about 20 ft. high and is parabolic in section. Its main purpose is to facilitate the bringing in of special installations. (2) The subway leading to the places of honour; and (3) the north subway, which is for the use of the participants.



An exterior view of the stadium from the west side

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchant's warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	7	0
Pit Sand	,,	1	4	5
Washed Sand	,,	1	7	7
¾ in. Shingle	,,	1	3	11
¾ in. Broken Brick	,,	1	0	6
Pan Breeze	,,		10	9
Fine or Coarse Foamed Slag Aggregate ... ... 2 yds. of fine and 2.6 yds. of coarse per ton.	per ton	3	5	0

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area. 6-ton loads and upwards, site	per ton	5	4	6
1 to 6 tons, site	,,	5	16	6
Rapid Hardening Cement in 6-ton loads and upwards to site	,,	5	15	0
1 to 6 tons do. site	,,	6	7	0
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Sulphate Resisting Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots ... Other colours according to colour.	,,	8	1	0
In 4-ton lots from 298s. 0d. to 688s. 0d. per ton.				
White Portland Cement	,,	13	5	0
Under 1 ton	per cwt.		15	10
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	17	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £11 8s. 0d. to £14 3s. 0d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	,,	14	15	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	6	17	6
Moler Mortar Powder for Flue Bricks (London sites)	per cwt.	1	11	0

BRICKS

Full Loads.

		£	s.	d.
First Hard Stocks	per 1,000	12	17	0
Second Hard Stocks	,,	11	16	0
Mild Stocks (Kiln Burnt)	,,	9	1	6
Mild Stocks	,,	8	16	6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2⅝ in. Nominal Fleiton Bricks to sites in W.C. District Commons	,,	5	18	0
Cellular do.	,,	5	18	0
Keyed do.	,,	6	0	0
Rustics	,,	7	10	0
Cellular Rustics	,,	7	10	0
Single Bullnose Commons	,,	7	12	6
Sandfaced	,,	8	10	0
Tuscans	,,	9	5	0
Saxons	,,	9	13	0
Golden Buffs	,,	10	0	0
Dapple Light	,,	10	7	6
Best Blue Pressed Staffs (London Stations) ...	,,	28	15	6
,, Bullnose (London Stations)	,,	29	9	6
Blue Wire Cuts (London Stations)	,,	25	19	0
Midhurst Lime Bricks (London sites)	,,	10	14	0
Uxbridge Whites (London sites)	,,	9	17	0
Special Purpose Sandlime Bricks (London sites) ...	,,	7	18	6
2½ in. Best Stourbridge Fire Bricks (London Stations)	,,	28	3	3
3 in. do. (London Stations)	,,	33	16	3
2½ in. Moler Flue Bricks (London sites)	,,	37	10	0
2½ in. Machine-made Sandfaced Red Facings (London sites)	,,	15	8	6
2½ in. Machine-made Multi Red Facings (London sites)	,,	15	13	6
2½ in. Hand-made Sandfaced Red Facings (London sites)	,,	15	13	6
2⅝ in. Hand-made Sandfaced Multi-Colour Facings (London sites)	per 1,000	16	8	6
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London sites)	,,	18	19	0
Hand-made Sandfaced Multi-Colour Facings. Berkshire district (London sites)	,,	18	19	0
Rubber Bricks for gauged arches (London sites) ...	,,	42	17	6
2⅝ in. Surrey Clamp Burnt Multi Stock Facings (London sites)	,,	13	16	6
2⅝ in. Surrey Kiln Burnt Multi Stock Facings (London sites)	,,	15	6	0
Glazed Bricks (London sites), White, Ivory, Brown—				
Stretchers	,,	64	0	0
Headers	,,	63	0	0
Quoins, Bullnose and 4½ in. Flats	,,	80	0	0
Double Stretchers	,,	85	0	0
Double Headers	,,	77	10	0
One side and two ends	,,	87	0	0
Two sides and one end	,,	89	10	0
Splays and Squints	,,	83	0	0

Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 25% for Best quality and plus 25% less 10% for Second quality.

PARTITION SLABS, etc.

Delivered Central London Area. (W.C. District.)

	Minimum lorry loads		£	s.	d.
HOLLOW CLAY PARTITION BLOCKS (Keyed)					
*2 in.	140 yds.	per yd. sup.		4	5
*2½ in.	140 yds.	,,		4	8
*3 in. (3 cavity) ...	120 yds.	,,		5	5
BUILDING BLOCKS (Keyed)					
*3 in. (6 cavity) ...	110 yds.	,,		5	7
*4 in. (6 cavity) ...	95 yds.	,,		6	10
6 in. (8½ in. × 5⅝ in.)	1,250 blocks	per 1,000	26	18	0

* Half blocks at no extra charge.

			£	s.	d.
CLINKER CONCRETE					
2 in.	100 yds.	per yd. sup.		3	9
2½ in.	85 yds.	,,		4	4
3 in.	75 yds.	,,		5	3
4 in.	55 yds.	,,		6	5
CRANHAM					
2 in.		,,		6	9
2½ in.		,,		7	5
3 in.		,,		8	9
4 in.		,,		10	9
4½ in. Load bearing quality		,,		11	10
MOLER PARTITION BLOCKS					
2 in.	150 yds.	,,		16	0
2½ in.	120 yds.	,,		16	6
3 in.	100 yds.	,,		17	0
4 in.	90 yds.	,,		19	9
LIGHTWEIGHT CONCRETE BUILDING AND PARTITION BLOCKS OF VARIOUS SOURCES OF MANUFACTURE					
2 in.	100 yds.	,,		5	10
2½ in.	80 yds.	,,		7	0
3 in.	65 yds.	,,		8	2
4 in.	50 yds.	,,		9	8
4½ in.	44 yds.	,,		10	4
6 in.	33 yds.	,,		13	10½
THERMALITE-YTONG PARTITION BLOCKS					
2½ in.	144 yds.	,,		7	1
THERMALITE-YTONG LOADBEARING INSULATING BLOCKS					
3 in.	120 yds.	,,		8	6
4 in.	90 yds.	,,		11	1
5 in.	72 yds.	,,		13	10
6 in.	60 yds.	,,		16	7
8½ in.	42 yds.	,,	1	3	9
FLOOR BLOCKS AND FILLER TILES					
3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads		per 1,000	34	1	0
4 in. do.		,,	36	10	0
5 in. do.		,,	43	15	0
6 in. do.		,,	49	19	0
7 in. do.		,,	61	8	0
8 in. do.		,,	71	19	0
12″ × 3″ × ⅝″ Filler Tiles in multiples of 10 tiles per 1,000 multiples			42	15	0
12″ × 4″ × ¾″ do. do.			73	15	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Revised Standard List (Nov., 1956) prices delivered London Area.

Delivered ex Merchants Wharf or Depot or Manufacturers Works.

	Over 2 tons	Over 100 pieces Under 2 tons	Under 100 pieces Under 2 tons
Best Quality ...	−7½%	+8¾%	+15%
BSS Best do. ...	+10% −7½%	+10% +8¾%	+10% +15%
Tested Quality	+37½% −7½%	+37½% +8¾%	+37½% +15%
BSS Tested do.	+47½% −7½%	+47½% +8¾%	+47½% +15%

STONEWARE DRAIN PIPES, etc.—*continued*

	£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths) ... per 1,000	11	10	6
4 in. do. ... ... ,,	15	3	6
6 in. do. ... ... ,,	31	9	0
9 in. do. ... ... ,,	59	13	0

DAMP COURSE

Hessian base bitumen 7 lb. per yd. sup. in 24 ft. rolls cut to wall widths in lots of £6 value and over delivered London area ... ... per yd. sup.		3	9
Asbestos base ditto 7 lb. per yd. sup. do. do. ,,		5	6
Lead lined bitumen ditto 9½ lb. per yd. sup. do. ,,		12	6
18 in. × 9 in. British damp course slates ... ... per 1,000	43	8	11
14 in. × 9 in. do. do. ... ... ,,	32	8	2
9 in. × 9 in. do. do. ... ... ,,	18	18	9
18 in. × 4½ in. do. do. ... ... ,,	19	19	9
14 in. × 4½ in. do. do. ... ... ,,	15	18	3
9 in. × 4½ in. do. do. ... ... ,,	10	14	3

STONE

Bath Stone—			
Monks Park ... ... per ft. cube		8	1½
St. Aldhelm Box Ground ... ... ,,		9	1½
Delivered in railway trucks at South Lambeth B.R. Western Region.			
Doulting Stone Random Blocks. Delivered London area ,,		8	11
Beer Stone. Delivered London area ... ... ,,		8	5
Portland Stone—			
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region ... ... ,,		8	5
Yorkshire Stone—Blue Robin Hood Quality.			
Delivered to site London in 6-ton lots.			
9 in. × 3 in. Rubbed, weathered, throated and stooled cills ... ... per ft. cube	3	17	9
12 in. × 6 in. do. do. ... ... ,,	2	15	6
12 in. × 3 in. Plain coping, twice throated ... ,,	2	3	0
12 in. × 3 in. Weathered and twice throated coping ,,	2	17	3
14 in. × 6 in. do. do. ... ... ,,	2	11	9
4½ in. × 9 in. Plinth, rubbed on top and face ... ,,	2	6	3
3 in. sawn two sides Slabs, random sizes ... ... per ft. sup.		8	3
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ... per ft. cube	1	8	3
Do. do. fair one edge for fair faced brickwork ... ... ,,	1	13	6
Hard York—			
12 in. × 2 in. Square Steps, rubbed on top and edge per ft. run		10	0
14 in. × 3 in. Round-nosed Steps, rubbed on top and front ... ... per ft. cube	2	12	9
12 in. × 6 in. Plain Steps, rubbed top and front ,,	2	6	3
2 in. Rubbed and Jointed Paving, given sizes ... per ft. sup.		9	4
2 in. Sawn Paving, edges squared, in random sizes per yd. sup.	3	5	3

TILES AND PANTILES

Delivered London area by road in 6 tons or over per 1,000			
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29	19	0
Hand-made Pantiles Berkshire district	55	18	0
Hand-made Double Roman Bridgwater district	59	5	0
Hand-made 10½ × 6½ tiles Berkshire district	15	9	0
Machine-made 10½ × 6½ Staffordshire district	14	1	9
Hand-made Hip and Valley tiles per doz.	1	11	3
Machine-made Hip and Valley tiles do.	1	8	0
Concrete tiles 10½ × 6½	8	5	6
do. Interlocking (49S)	19	9	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

24 × 12	143	15	10
22 × 12	116	17	4
22 × 11	105	10	10
20 × 12	99	0	1
20 × 10	94	16	9
18 × 10	65	16	9
18 × 9	57	14	0
16 × 10	51	17	0
16 × 8	40	11	9

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—				
Joinery quality	Ex Wharf	per standard	£115 to £140	
Carcassing quality	do.	,,	£97 to £102	
1 in. Tongued and Grooved Flooring	do.	,,	£110	0 0
Hardwood—				
Mahogany—African S.E.	do.	per ft. cube	1	10 0
do. Honduras do.	do.	,,	3	5 0
Oak European do.	do.	,,	2	5 0
do. Japanese do.	do.	,,	2	10 0
do. English Logs sawn	do.	,,	1	17 6
Teak 8 in. average S.E.	do.	,,	3	17 6
Walnut African Logs sawn	do.	,,	1	5 0

DOORS (in Lots I-11)

	£	s.	d.
Delivered London area.			
1½ in. 4 Horizontal Panel. Pattern 4 in. deal			
2 ft. 0 in. × 6 ft. 6 in. ... ... each	1	12	0
2 ft. 3 in. × 6 ft. 6 in. ... ... ,,	1	13	0
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	1	14	0
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	1	16	6
2 in. do. but top panel open. Pattern 4 × G in deal			
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	2	9	0
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	2	11	6
2 in. 2 Panel, top panel open. Pattern 2 × G in deal			
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	2	1	9
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	2	3	6

SUNDRIES

Delivered London area.			
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton) ... ... per yd.		5	8
1½ in. do. (67 yds. to 1 ton) ... ... ,,		7	4
2 in. do. (52 yds. to 1 ton) ... ... ,,		8	11½
2½ in. do. (45 yds. to 1 ton) ... ... ,,		10	3
3 in. do. (39 yds. to 1 ton) ... ... ,,		11	5½
Quantities under 1 ton add 1d. per ½ in. of thickness.			
½ in. imported insulation Board, quantities over 5,000 sq. ft. per 100 sq. ft.	2	2	6
⅛ in. Hardboard do. ... ... ,,	2	1	6
7/16 in. do. do. ... ... ,,	3	2	6
7/16 in. Asbestos Flat Building Sheets ... ... per yd. sup.		3	8
¼ in. do. ... ... ,,		4	10
Roofing Felt, 1-ply ... ... ,,		1	9
do. 2-ply ... ... ,,		2	2½
Best Scotch Glue in slabs ... ... per ½ cwt.	5	0	0
do. pearl ... ... ,,	5	5	0
Croid Glue ... ... 28 lb.	2	6	0
Cut Nails 3 in. (1-ton lots) ... ... per ton	70	10	0
do. 4 in. and up (1-ton lots) ... ... ,,	67	0	0
Wire Nails, 3 in. (4-cwt. lots) ... ... per cwt.	3	6	10
do. 4 in. and up (4-cwt. lots) ... ... ,,	3	6	3

METALS

STEEL JOISTS, ETC.

Basis Joists—			
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in., 12 in. × 6 in. plain cut to lengths delivered London area ... ... per ton	48	2	6
Extra for sizes			
3 in. × 1½ in. 4 in. × 1½ in. ... ... ,,	3	10	0
3 in. × 3 in. ... ... ,,	2	10	0
4 in. × 3 in. ... ... ,,	2	5	0
10 in. × 4½ in. ... ... ,,	1	10	0
5 in. × 2½ in. 5 in. × 3 in. ... ... ,,	1	15	0
4¾ in. × 1¾ in. ... ... ,,	3	5	0
5 in. × 4½ in. 7 in. × 3½ in. 13 in. × 5 in. ,,		15	0
6 in. × 3 in. 24 in. × 7½ in. ... ... ,,	2	0	0
6 in. × 4½ in. 7 in. × 4 in. 8 in. × 4 in. } ,,	1	5	0
9 in. × 4 in. 10 in. × 5 in. ... ... }			
12 in. × 5 in. 22 in. × 7 in. ... ... ,,	1	0	0
9 in. × 7 in. 10 in. × 8 in. 12 in. × 8 in. }			
14 in. × 5½ in. 14 in. × 6 in. 14 in. × 8 in. }			
15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in. } ,,		10	0
16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in. }			
18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7½ in. }			
Steel angles average price ... ... ,,	50	5	0
Steel tees average price ... ... ,,	51	5	0
Fabricated work delivered London—			
R.S. Joists cut and fitted ... ... ,,	65	12	6
Compound girders ... ... ,,	71	15	0
Stanchions ... ... ,,	77	2	6
Compound stanchions ... ... ,,	81	10	0
In Roof Work—Trusses and Purlins ... ... ,,	94	15	0
Average prices not for awkward work.			
Angle cleats and ⅝ in., ¾ in. and ⅞ in. bolts average price London area ... ... per cwt.	5	7	6

FERRO-CONCRETE BARS

Mild Steel Ferro-Concrete bars British manufacture to BSS785 ex London Stock ⅝ in. diam., and upwards ... ... per ton	46	5	0
½ in. diam. ... ... ,, extra	8	12	0
7/16 in. do. ... ... ,,	6	12	0
⅜ in. do. ... ... ,,	4	12	0
⅛ in. do. ... ... ,,	3	2	0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts :

Galvanised Tube—	Under 1 ton	Over 1 ton	W.I. Fittings	Malleable Fittings
Class A	+ 14¼%	+ 9¼%	Light + 36%	Malleable List
Class B	+ 26 %	+ 21 %	Heavy + 43¼%	−25% +40%
Class C	+ 44¾%	+ 39¼%		
Black—				
Class A	− 8½%	− 13½%	Light + 22½%	Malleable List
Class B	+ 4½%	− ¾%	Heavy + 30½%	− 25%
Class C	+ 19¼%	+ 14¼%		

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/10½	3/5	1/–
3½ in.	4/2½	3/9	1/–
4 in.	5/5½	4/3	1/6
4½ in.	5/11½	4/9	1/9
5 in.	6/8	5/1	2/1

METALS—*continued*

C.I.O.G. Gutters

	Gutters	Nozzle	Stop Ends
3 in.	5/–	4/6	1/2
3½ in.	5/7	4/6	1/6
4 in.	6/2	4/9	1/9
4½ in.	6/8	5/5	2/1
5 in.	7/3½	6/2	2/4

C.I. Rain-water Pipes

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	8/3½	4/3	6/1
2½ in.	8/3½	4/9	8/2
3 in.	9/3½	5/11	8/10
3½ in.	10/7	7/–	10/7
4 in.	12/3	8/5	12/7

L.C.C. Coated Soil Pipes

2 in.	9/5	7/3	8/10
2½ in.	9/9½	8/–	11/–
3 in.	11/1½	8/10	13/–
3½ in.	12/5½	11/–	15/2
4 in.	14/2	12/3	17/11

Above prices for gutters, rain-water and soil pipes for under 5 cwt. lots only. Lots over 5 cwt. see List No. 3300 dated February 1, 1955, plus 17½% and tonnage allowance. 4-ton lots 5 per cent., 2-ton lots 2½ per cent.

L.C.C. Coated Drain Pipes

In 9-fts.	cwt.	qt.	lb.	per yd.	Bends	Branches
4 in.	1	1	17	33/6	23/–	41/–
6 in.	2	0	1	49/2	61/3	98/–

Asbestos Rain-water Pipes and Fittings

All less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	per yd.	4/3	4/6½	5/6	7/3½
Shoes	each	2/9	3/–	3/7	4/10
Single Branches	„	4/4	5/1	6/1	8/6
Bends square or obtuse	„	3/–	3/4	4/4	6/1
Swan Necks 4½ in. proj.	„	3/4	4/4	4/10	6/9
„ 6 in. „	„	3/7	4/4	5/5	7/3

Asbestos O.G. Gutters and Fittings

		4 in.	4½ in.	5 in.	6 in.
Gutters 6 ft. lengths	per yd.	4/1	4/5½	5/4	6/4½
Drop ends	each	3/3	3/9	4/5	5/2
Stop ends	„	1/–	1/1	1/2	1/4
Angles	„	3/4	3/10	4/8	5/5
Nozzles	„	3/3	3/9	4/5	5/2
Union Clips	„	1/7	1/11	2/4	2/8

Asbestos Half-Round Gutters and Fittings

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6 ft. lengths	per yd.	2/10	3/4½	3/5½	4/1	5/8
Drop ends	each	2/4	2/9	3/–	3/4	4/10
Stop ends	„	–/11	1/–	1/1	1/2	1/4
Angles	„	2/8	3/–	3/4	3/7	4/10
Nozzles	„	2/4	2/9	3/–	3/4	4/10
Union Clips	„	1/2	1/3	1/4	1/6	2/3

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	49 7 6
Mild Steel Bars	43 18 0
Mild Steel Hoops	44 2 6

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	58 2 6
24 gauge	60 12 6
26 gauge	63 12 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	66 17 0
24 gauge	70 7 0
26 gauge	75 12 0
Galvanised flat sheets C.R. and C.A.—	
20 gauge	68 7 0
24 gauge	71 17 0
26 gauge	77 2 0

ALUMINIUM AND ALUMINIUM ALLOYS

(Base prices)		£ s. d.
Sheet BS 1470 S1C 18 SWG (36 in. wide)	per lb.	2 10½
Sheet BS 1470 NS3 Utility 18 SWG (36 in. wide)	„	2 8
Coiled strip BS 1470 S1C 18 SWG (24 in. wide)	„	2 9½
Coiled strip BS 1470 NS 3 Utility 18 SWG (24 in. wide)	„	2 7½
Coiled strip for flashing 99.7% purity 22 SWG (12 in. wide)	„	3 0
Corrugated sheet BS 1470 NS 3 Utility Circular Profile 8 ft. × 32 in. × 20 SWG	per sheet	1 12 0
Corrugated sheet BS 1470 NS 3 Utility Industrial Profile 8 ft. × 31½ in. × 20 SWG	„	1 17 11
Corrugated sheet BS 1470 NS 3 Utility Mansard Profile 8 ft. × 31½ in. × 20 SWG	„	1 11 2
Extruded section BS 1476 E1C simple moulding	per lb.	2 8½
Extruded section BS 1476 E1C 1 in. diam. round	„	2 6
Extruded section BS 1476 HE1WP simple angle	„	2 11½
Extruded section BS 1476 HE10WP 1 in. diam. round	„	2 10½
Tubing BS 1471 T1C 1½ in. O/D × 20 SWG	„	4 3½
Tubing BS 1471 HT10WP 1½ in. O/D × SWG	„	5 6½

PLUMBERS' BRASS WORK, etc.

Delivered in London area.

M.O.H. All per doz.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	87/–	128/8				
Toilet bib cocks for iron	109/–	158/5				
Screwdown stop cocks for iron	66/–	95/9	188/–	363/–	522/6	917/6
do. with two unions for lead	89/–	132/–	234/4	472/–	623/6	1389/6
Double nut boiler screws	18/8	26/5	47/6	48/6	67/–	93/6
Heavy Croydon ball valves	77/–	193/6	312/5	568/8	734/10	–
Plumbers' union brass lead to iron	19/6	23/6	38/6	52/10	70/6	165/–
	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	33/–	40/8	59/6	92/5	118/10	155/3
Brass sleeves		31/11	31/11	56/2	74/10	91/5

	1½ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.
Lead P. trap with brass cleaning screws	72/–	90/–	144/–	246/–
Lead S. trap do.	87/–	108/–	177/–	318/–

Solder	s. d.
Plumbers' 1 cwt. lots	351/–
Tinmen's „ „	427/–
Blow pipe „ „	430/–
14 lb. lots per lb.	3 6
„ „	4 1
„ „	4 3

Copper Tubes and Sheets

Copper tubes BSS 659/1944 on the basic price of 28¾d. per lb. plus gauge and manufacturing extras as follows. Minumum quantities, 3 cwt.

	Extra d.	Total per lb. d.		d.
⅛ in. × 19 gauge	14	42⅜	approx per ft.	11½
¼ in. × 19 „	12⅜	40⅛	„ „	16
1 in. × 18 „	10⅞	39¼	„ „	24½
1¼ in. × 18 „	10¼	38⅝	„ „	29½
1½ in. × 18 „	10¼	38⅝	„ „	35½
2 in. × 17 „	11⅞	40¼	„ „	50½

Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras ... ... per ton £277 5 0

Zinc

		£ s. d.
Sheet Zinc	10 gauge (25 SWG) 5 cwt. lots upwards per cwt.	8 9 0
do.	12 gauge (23 SWG) „ „	8 6 6
do.	14 gauge (21 SWG) „ „	8 5 3

Brass Tubes

		£ s. d.
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	1 11½

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	150 15 0
Lead Water Pipe in coils	„	153 0 0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia.	„	154 10 0
„ over 4 in. dia.	„	156 10 0
Lead Gas or Untinned Compo pipe	„	154 10 0

Extras over Basis for quantities under 1 ton		£ s. d.
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	„	4 0
1 cwt. do. 3 cwt.	„	6 0

Smaller quantities than 1 cwt. priced specially.

Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.

Allowance for Old Lead, collected £103 10s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

		£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site	per ton	8 2 3
do. White do. do.	„	8 11 9
Siripite Coarse do. do.	„	8 4 3
do. Fine do. do.	„	8 12 3
Blue Lias Lime in 6-ton loads	„	6 14 6
Hydrated Lime (Grey) do.	„	5 17 6
do. (White) do.	„	6 5 0
Lump Lime (Grey) do.	„	5 7 0
do. (White) do.	„	5 14 6
White Keen's or Parian Cement in 1-ton loads	„	11 11 9
Pink Keen's or Parian Cement in 1-ton loads	„	11 6 6
Granite Chips in 6-ton loads	„	2 10 6
Hair	per cwt.	4 17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site	per yd.	2 4
1,200 yds.	„	2 3½
Do. Insulating do. ⅜ in. thick 600 yds. and over in one delivery. Delivered site	„	3 0
1,200 yds.	„	2 11½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ⅜ in. thick, 600 yds. and over in one delivery Delivered site	„	2 7
1,200 yds.	„	2 6½
Do. Insulating do. ⅜ in. thick 600 yds. and over in one delivery. Delivered site	„	3 3
1,200 yds.	„	3 3½

PAINT AND DISTEMPER

Delivered London area		£	s.	d.
Ceiling Distemper	per cwt.	1	7	6
Washable Distemper	„	5	5	0
Gloss Paint	per gal.	2	12	0
Snowcem cement paint (in 1 cwt. drums)	per cwt.	3	11	0
LEAD PRODUCTS AND OILS				
Ground White Lead, 1 cwt. kegs	per cwt.	9	11	6
Genuine White Lead Paint, 1-19 gal. lots in 1 gal tins	per gal.	3	9	6
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	7	9	9
Genuine Linseed Oil Putty, 1 cwt. keg	„	2	17	0
Size XD quality 28 lb.	per tin		9	0
Raw Linseed Oil (5 gal.) drums extra	per gal		17	3
Boiled Linseed Oil (5 gal.) do.	„		17	9
SUNDRIES				
Turpentine substitute (5 gal.) drums extra	„		5	6⅛
do. do. (40 gal.) do. do. ...	„		4	10⅛
Solignum, Brown (5 gal. cans) Exterior	„		8	4
Creosote (40 gal. barrels)	„		2	0
Paste Powder (1 lb. packets)	per lb.		2	0
White Lining Paper	per piece		1	1

VARNISHES, etc.

Delivered London area				
Oak Varnish, Outside or Inside	per gal.	2	0	0
Oak Pale Copal do.	„	2	0	0
Hard Drying Oak for Inside	„	2	5	0
Crystal Paper Varnish do	„	2	8	0
Eggshell Flat Varnish do.	„	2	6	0
Finest Carriage Varnish	„	2	7	0
Front Door Varnish	„	2	4	0
Japan Gold Size	„	1	18	0
Black Japan	„	1	16	0
Brunswick Black	„	1	12	0
Berlin Black	„	1	10	0
Terebene	„	1	17	0
Knotting (1 gal. bottles free)...	„	2	8	0
French and Brush Polish (do.)	„	2	2	0

GLASS

Delivered London area	per ft. super s.	d.
18 oz. Sheet Glass Ordinary Glazing Quality- Cut Sizes		7½
24 oz. „ „ „ „ „ „		9½
26 oz. „ „ „ „ „ „	1	0½
32 oz. „ „ „ „ „ „	1	3⅝
⅛ in. Rolled Plate		10⅞
⅛ in. and ¼ in. Rough Cast	1	2½

	Per ft. super s.	d.
⅛ in. Figured Rolled and Cathedral, Standard patterns:		
White Group 1		10½
do. Group 2	1	2
do. Standard Tints	1	8
do. Special Tints	3	4
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating Group 3	1	3½
¼ in. Wired Cast	1	5
¼ in. Georgian Wired Cast	1	5½
Hollow Glass Blocks—	Each	
P.B.2 5½ × 5½ × 3⅝ in.	3	3
P.B.3 7½ × 7½ × 3⅝ in.	5	0
P.B.32 7½ × 7½ × 3⅝	5	0
Radiused Corner Blocks to match up with—		
P.B.2	6	0
P.B.3	7	6
P.B.32	7	6
¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super	
In plates not exceeding 2 ft. sup.	3	10
„ „ „ 5 ft. sup.	4	9
„ „ „ 45 ft. sup.	5	7
„ „ „ 100 ft. sup.	6	0
¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality —Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways	9	0
Not exceeding 180 ft. sup. or ditto	12	1
Not exceeding 200 ft. sup. or ditto	17	2
Plates exceeding 200 ft. sup. prices on application.		
Substances other than ¼ in. Polished Plate at Special Prices.		

Quantity Tariff—Sheet and Sundry Glass.

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. sup. s.	d.
18 oz. sheet O.Q.	3,000		4½
24 oz. „ „	2,000		6½
26 oz. „ „	2,000		8⅛
32 oz. „ „	2,000		11½
⅛ in. Rolled Plate	1,000		8⅛
⅛ in. Figured Rolled and Cathedral Standard Patterns, White Group 1	1,000		8⅛
do. Group 2	1,000	1	5½
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte Group 3	1,000		11½
3/16 in. and ¼ in. Rolled Plate or Rough Cast ...	2,000	1	0
¼ in. Wired Cast, Hexagonal...	2,000	1	2
¼ in. Georgian Wired Cast	2,000	1	2½

The Builder

CURRENT RATES OF WAGES

AS FROM FEBRUARY 4, 1957. (Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1
Craftsmen	4/4½	4/4
Labourers	3/10	3/9½

Town.	*Grade.*
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A1
Accrington	A
Addlestone	A
Afan Valley	A
Aldeburgh	A1
Aldershot District	A1
Alfreton UD	A
Alnwick UD	A
Altrincham	A
Amble	A
Ambleside	A1
Amersham	A1
Ammanford	A
Andover	A1
Anglesey, Isle of	A1
Ardingly	A1
Arundel	A1
Ascot	A1
Ashbourne RD	A1
Ashbourne UD	A1
Ashby-de-la-Zouch UD	A
Ashby Woulds UD	A
Ashford (Kent)	A1
Ashford (Middlesex)	A
Ashington UD	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A1
Atherstone RD	A
Attleborough	A1
Axminster	A1
Aylesbury	A1
Aylsham	A1
Bagshot	A1
Bakewell UD	A1
Banbury	A1
Bangor	A1
Barnard Castle UD	A
Barnoldswick UD	A
Barnsley CB	A
Barnstaple	A1
Barrow-in-Furness	A
Barrow-upon-Soar RD (part Thrussington)	A1
Barry	A
Basford RD (exc. Willough-by-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley MB	A
Baxterley	A1
Beaconsfield District	A
Bearl	A
Beccles	A1
Bedale RD	A
Bedford	A
Bedlington	A
Bedlingtonshire UD	A
Bedwas	A
Beeston & Stapleford UD	A
Belper UD	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick Borough	A
Beverley MB	A
Bewdley MB	A
Bexhill-on-Sea	A1
Bideford	A1
Biggleswade	A1
Billericay	A
Billing	A
Billingham UD	A
Bilsthorpe	A
Bilston MB	A
Birchington	A1
Birkenhead	*
Birmingham CB	†A
Bishop Auckland UD	A
Bishop's Stortford	A
Bishops Castle MB	A1
Bispham	A
Blackburn	A
Blackpool	A
Blackwell RD	A
Blandford	A1
Blaydon UD	A
Blidworth	A
Blyth B.	A
Bodmin	A1
Bognor Regis	A1
Boldon UD	A
Bolsover UD	A
Bolton	A
Boston MB	A
Bourne End	A
Bournemouth District	A
Brackley MB	A1
Bracknell	A1
Bradford CB	A
Bradford-on-Avon	A1
Braintree	A1
Brandon & Byshottles UD	A
Brecon—Borough of	A1
Breconshire, County of	‡A1
Brent Knoll	A1
Brentwood	A
Bridgend	A
Bridlington MB	A
Bridlington RD	A1
Bridgnorth MB	A1
Bridgnorth RD	A1
Bridgwater	A
Brierfield	A
Brighouse MB	A
Brighton & Hove	A
Bristol District	A
Broadstairs	A1
Bromsgrove UD	A
Broughton, Flint	A
Buckfastleigh	A1
Buckingham	A1
Buckley	A
Bungay	A1
Burnham-on-Crouch	A1
Burnham-on-Sea	A1
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Caernarvon	A1
Caernarvonshire, Cnty. of	‡A1
Calder Valley	A
Camberley District	A1
Cambridge	A
Cannock UD	A
Canterbury	A1
Cardiff	A
Cardiganshire, County of	‡A1
Carlisle	A

CURRENT RATES OF WAGES—Continued

Town.	Grade.
Carlton UD	A
Carmarthen—Borough of	A1
Carmarthenshire,Cnty of	‡A1
Carnforth	A
Castleford UD	A
Caterham	A
Chapel-en-le-Frith	A
Chard	A1
Charmy Down	A
Chatham District	A
Chatteris	A1
Cheadle (Staffs) RD	A
Chelmsford	A
Cheltenham	A
Chepstow	A
Chertsey	A
Chester	A
Chester-le-Street UD	A
Chesterfield MB	A
Chesterfield RD	A
Chichester	A1
Chipping Norton	A1
Chipping Sodbury	A1
Chippenham (inc. Chippenham Within and Hardenhuish)	A1
Chorley	A
Cirencester	A1
Clacton	A1
Clay Cross UD	A
Cleethorpes MB	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville UD	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett UD	A
Conway	A1
Corby UD	A
Cornwall, County of	‡A1
Corsham District	A
Coventry CB	A
Cranbrook	A1
Cranleigh	A1
Cranwell Aerodrome Site	A
Crawley	A1
Crewe	A
Crewkerne	A1
Cromer	A1
Crook and Willington UD	A
Crowborough	A1
Cuckfield	A1
Cwmbran	A
Dalton-in-Furness	A
Darlington CB	A
Dartmouth	A1
Darwen	A
Daventry MB	A1
Deal	A1
Denbigh Town	A1
Derby CB	A
Devizes	A1
Devon, County of	‡A1
Dewsbury CB	A
Didcot	A1
Diss	A1
Doncaster CB	A
Dorchester	A1
Dorking	A
Dorset, County of	A1
Dover	A1
Dovercourt	A
Driffield UD	A1
Drigg & Carleton	A
Droitwich MB	A
Dudley CB	A
Dunstable	A
Durham B	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A1
East Kesteven RD	A1
East Retford MB	A
Eastwood (Notts) UD	A
Ebbw Vale & District	A
Edenbridge	A1
Ely	A1
Epping	A
Evesham MB	A1
Exeter	A
Exmouth	A1
Fakenham	A1
Falmouth	A1
Fareham	A
Faversham	A1
Felixstowe	A1
Filey UD	A
Fleetwood	A
Flint MB	A
Folkestone	A1
Frinton	A1
Frome	A1
Gainsborough UD	A
Gateshead CB	A
Gillingham (Dorset)	A1
Gillingham (Kent)	A
Glastonbury & Street	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A1
Godalming	A1
Goole, MB	A
Goole RD (part—Airmyn, Hook)	A
Gosport	A
Grantham MB	A
Gravesend	A
Grays Thurrock UD Area	A
Great Yarmouth	A
Grimsby CB	A
Grimsby RD (part)	A1
Guildford District	A1
Halesowen MB	A
Halifax CB	A
Halstead	A1
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate MB	A
Hartlepool B	A
Harwell	A1
Harwich	A
Haslemere	A1
Hastings	A1
Hatfield (Herts)	A
Havant	A
Haywards Heath	A1
Heanor UD	A
Hemel Hempstead	A
Henley-on-Thames	A1
Hereford	A1
Herefordshire, Cnty. of	‡A1
Herne Bay	A1
Hertford	A
Hexham RD	A
Hexham UD	A
Heysham	A
Heywood	A
Higham Ferrers MB	A
High Wycombe	A
Hinckley UD	A
Hitchin	A
Hoddesdon	A
Holywell	A
Horley	A1
Horncastle UD	A1
Horsham	A1
Horwich	A
Huddersfield CB	A
Hull	A
Hunstanton	A1
Huntington (Staffs)	A
Ilfracombe	A1
Ilkeston MB	A
Ilkley UD	A
Ipswich	A
Isle of Sheppey	A1
Isle of Thanet	A1
Isle of Wight	A1
Jarrow B	A
Keighley MB	A
Kendal	A
Kenilworth UD	A
Kettering MB	A
Keynsham	A
Kidderminster MB	A
Kingskerswell	A1
King's Lynn	A1
Kingsteignton	A1
Kirkham	A
Knaresborough UD	A
Knutsford	A
Lancaster	A
Leamington MB	A
Leatherhead	A
Leeds CB	A
Leek UD	A
Leicester CB	A
Leighton Buzzard	A1
Leiston	A1
Leominster	A1
Letchworth	A
Lewes	A1
Lichfield MB	A
Lincoln CB	A
Liskeard	A1
Littlehampton	A1
Liverpool	*
Llandudno	A1
Llanelly (incl. Llanelly RD)	A
Llanfairfechan	A1
Llangollen	A1
London	*
Long Eaton	A
Looe	A1
Loughborough MB	A
Louth MB	A1
Lowestoft	A
Loxton	A1
Ludlow MB	A1
Ludlow RD	A1
Luton	A
Lyme Regis	A1
Lyneham (Devon)	A1
Lytham	A
Macclesfield	A
Maidenhead	A
Maidstone	A
Maldon (Essex)	A1
Maltby UD	A
Malton UD	A1
Malvern UD	A1
Manchester	A
Manningtree	A1
Mansfield MB	A
March	A1
Margate	A1
Market Harborough RD	A1
Market Harborough UD	A
Market Rasen UD	A1
Martock	A1
Maryport	A
Matlock UD	A
Melksham	A1
Melton Mowbray UD	A1
Merionethshire	A1
Merthyr	A
Mexborough UD	A
Middlesbrough CB	A
Middleton	A
Middlewich	A
Mildenhall	A1
Milford Haven UD	A1
Minehead	A1
Monmouth—Borough of	A1
Monmouthshire	A1
Morecambe	A
Moreton Valence	A1
Morley	A
Morpeth B	A
Morpeth RD	A
Mundesley	A1
Nantwich	A
Neath & Valley	A
Nelson	A
Newark MB	A
Newbury	A1
Newcastle-on-Tyne CB	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A1
Newquay	A1
Newton Abbot	A1
Normanton UD	A
Northallerton District	A
Northallerton UD	A
Northampton CB	A
North Shields	A
North Walsham	A1
Northwich	A
Norton Radstock	A1
Norwich	A
Nottingham CB	A
Nuneaton MB	A
Oakham RD	A1
Oakham UD	A1
Okehampton	A1
Oldham	A
Ongar	A
Ormskirk	A
Ossett & Horbury	A
Oswestry	A1
Oundle UD	A1
Oxford	A
Oxted	A1
Padstow	A1
Paignton	A1
Par	A1
Pembrokeshire (except Milford Haven)	A1
Penmaenmawr	A1
Penrith UD	A1
Penzance	A1
Peterborough, Soke of (Eastern Regional portion)	A1
Petersfield	A1
Pickering	A1
Plymouth	A
Pontefract MB	A
Pontypool & District	A
Pontypridd District	A
Porthcawl	A
Portishead	A
Portland Bill	A1
Portsmouth	A
Port Talbot	A
Preston	A
Princetown	A1
Pudsey MB	A
Pulborough	A1
Radnorshire, County of	‡A1
Ramsgate	A1
Raunds UD	A
Rayleigh	A
Reading	A
Redcar B	A
Redditch UD	A
Redhill & Reigate	A
Rhondda Valley	A
Richmond B (Yorks)	A
Ripon MB	A1
Rochdale	A
Rochester	A
Ross-on-Wye	A1
Rossendale Valley	A
Rotherham CB	A
Royston	A1
Rugby MB	A
Rugeley UD	A1
Rushden UD	A
Saffron Walden	A1
St. Albans	A
St. Austell	A1
St. Helens	A
St. Neots	A1
Salisbury City	A1
Salisbury Plain	A1
Sandy	A1
Sawbridgeworth	A
Saxmundham	A1
Scarborough MB	A
Scunthorpe MB	A
Seaford & Newhaven	A1
Selby UD	A
Sevenoaks	A
Shaftesbury	A1
Sheerness	A1
Sheffield MB	A
Shepton Mallet	A1
Sherborne	A1
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury MB	A
Sirhowy Valleys	A
Sittingbourne	A1
Skegness UD	A1
Skipton UD	A
Sleaford UD	A1
Slough, Windsor & Eton District	A
Smethwick CB	†A
Snettisham	A1
Solihull UD	A
Somerset, County of	‡A1
Southampton and Eastleigh	A
Southend-on-Sea Dist.	A
Southport	A
South Shields CB	A
Southwold	A1
Spalding UD	A1
Stafford MB	A
Staines	A
Stamford MB	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton RD	A
Stockton-on-Tees B.	A
Stoke-on-Trent CB	A
Stoke Orchard	A1
Stourbridge MB	A
Stourport UD	A
Stowmarket	A1
Stratford-on-Avon MB.	A
Stroud (RD Area)	A1
Sunderland CB	A
Sunningdale	A1
Sutton Coldfield MB	A
Swadlincote UD	A
Swaffham	A1
Swanage District	A1
Swansea	A
Swindon District	A
Swinton UD	A
Tamworth MB	A
Taunton	A1
Tavistock	A1
Tenterden	A1
Teignmouth	A1
Tewkesbury	A1
Thames Haven	A
Thetford	A1
Thirsk RD	A
Thorpe Bay	A
Thurrock UDC Area	A
„ North of to Billericay	A
Tilbury	A
Todmorden MB	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Tring	A1
Trowbridge	A1
Truro	A1
Tunbridge Wells	A1
Tynemouth CB	A
Ulverston	A
Uppingham (Salop)	A1
Uttoxeter RD	A1
Uttoxeter UD	A1
Wakefield CB	A
Wakefield RD	A
Walsall CB	A
Wallsend B	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A1
Warrington	A
Warwick MB	A
Wednesbury MB	A
Wellingborough UD	A
Wellington UD	A
Wellington (Somerset)	A1
Wells (Norfolk)	A1
Wells (Somerset)	A1
Welwyn	A
Welwyn Gar. City	A
West Bromwich CB	A
Westbury	A1
Westcliff-on-Sea	A
Westerham	A1
West Hartlepool CB	A
Westmorland (except Kendal)	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth (including Portland Bill, excluding Portland Stoneyards)	A1
Whitby UD	A1
Whitby RD	A1
Whitehaven	A
Whitley & Monkseaton UD	A
Whitstable and District	A1
Wickford	A
Widnes	A
Wigan	A
Wigton	A1
Wilmslow	A
Wilts. County of	‡A1
Wimborne	A1
Wincanton	A1
Winchester	A1
Windermere	A1
Wisbech	A1
Witham	A1
Withernsea UD	A1
Woking	A1
Wokingham	A1
Wolverhampton CB	A
Wolverton District	A1
Woodbridge	A1
Woodhall Spa UD	A1
Woodstock	A1
Worcester CB	A
Workington	A
Worksop MB	A
Worthing	A1
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A1
Yate	A1
Yeovil Borough	A1
York CB	A
Ystalyfera	A

*For Birkenhead, Liverpool and London the rates are:—Craftsmen, 4s. 6d.; Labourers, 3s. 11½d. In the case of London the rate beyond the 12-mile radius is: Craftsmen, 4s. 5½d.; Labourers, 3s. 11d. †Plus 2d. per working day. ‡This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

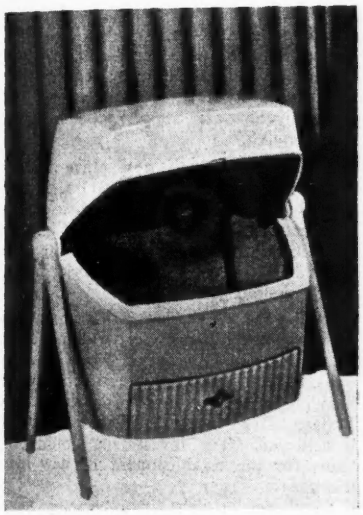
WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 3s. 6d. per hour. Women engaged on work other than craft processes, 3s. 2d. per hour.

For Building Trade Wages in Scotland see page 796

The Builder Review of PLANT & MATERIALS

Free-standing Open Fire

THE 'Caloray' free-standing open fire, by Lane and Girvan, Ltd., Caledonia Stove and Iron Works, Bonnybridge, Scotland, was the prize-winning design for a fire in an annual Industrial Design Competition run by the Royal Society of Arts; designer, Frank Watkins, DesRCA. It is supplied with four methods of mounting; tubular legs as in the illustration, with four short feet, with a closed cabinet base, and with cantilevered brackets. The overall width is 23½ in. in the first case and 21 in. in the other three. The depth is 13½ in., height



The 'Caloray' fire by Lane and Girvan, Ltd.

25 in. The fuel capacity is 0.56 cu. ft. The body is moulded in one piece of cast iron and has a built-in fire screen. Available in eight colours, including three mottles, it is recommended for rooms up to 2,000 cu. ft. Built-in gas ignition is provided and the throat restrictor also acts as a reflector plate.

High-pressure Coupling

Meynell and Sons, Ltd., Montrose-street, Wolverhampton, have introduced a new 'Anti-Kink' high-pressure swivel coupling designed either to join hose to hose or a hose to suitable attachments, to give an unlimited amount of free turning. The coupling is available from stock in sizes from ¼ in. to ¾ in. and is manufactured from high tensile steel, cadmium plated.

'Jellied Enamel'

The latest addition to the large range of paints and other products by A. Sanderson and Co., Ltd., of Hull, is 'Kingston' jellied enamel. It is a high-gloss paint that is stored in the form of a jelly which liquefies as it is brushed on to a surface where it reforms as a jelly, therefore eliminating runs, curtaining and so on. Excellent covering characteristics are claimed for this material, which is said to dry in four hours.

Repairs at Lichfield

Ruberoid slater's felt is being used under the new roof of the north transept of Lichfield Cathedral. The roof, which will be of Westmorland green slates, will be laid shortly. Restoration, which is extensive, was necessary because the old roof timbers had been badly damaged by death watch beetle. The felt was supplied by Walter Tipper, Ltd., and the work is being carried out by R. Bridgeman and Sons, Ltd., the Lichfield Church contractors.

TRADE NEWS

New Bristol Depot

The combined Aerialite-Nettle Bristol depot has been moved to Portland House, Portland-square, Bristol, telephone: Bristol 26130. The building acquired has a floor space much greater than the old premises.

Trade Publications

The following trade publications have been received:— '*Fungus Resisting Paints*' and '*B. P. L. Anti-condensation Coating*,' from British Paints, Ltd., Britannic Works, Portland-road, Newcastle-on-Tyne, 2. *Price list and Catalogue*, by Courtney, Pope (Electrical), Ltd., Amhurst Park Works, Tottenham, London, N15. *Rotary Portable Air Compressors*, Broom and Wade, Ltd., High Wycombe. '*Talking of Tubes*,' from ICI, Ltd., Imperial Chemical House, Millbank, London, SW1. '*Power Vane*' *Grinders*, by Consolidated Pneumatic Tool Co., Ltd., 232, Dawes-road, London, SW6. *Building Boards Price List*, from The Wallboard Centre, C. F. Anderson and Son, Ltd., Harris Wharf, Graham-street, London, N1. '*The Industrial Activities of the Distillers Co., Ltd.*' issued by the Distillers Co., Ltd., 12, Torphichen-street, Edinburgh, 3. '*Crossley Chronicles, No.* 196,' published by Crossley Brothers, Ltd., Openshaw, Manchester, 11. '*Good Company, Spring*,' published by Dexion, Ltd., Maygrove-road, London, NW6. *Conex-Terna Radiator Valves*, Conex-Terna, Ltd., Conex Works, Whitehall-road, Great Bridge, Tipton, Staffs. *Trowels for Bricklayers and Plasterers*, by Macco Manufacturing Co., Ltd., Macco Works, St. John's-street, Wolverhampton. Two leaflets. '*Swamp Model Tractors*' and '*The Fordson Major with 'County' Full Tracks, Mk.* 4,' from County Commercial Cars, Ltd., Fleet, Hants.

Change of Name

The Bison Multi-unit has been renamed the 'Bison Wide Slab.' This is considered to convey more clearly the image of a single floor unit, which is cast up to 7 ft. 2 in. wide.

Decrease in Tool Patterns

It is announced by Brades and Nash Tyzack Industries Ltd., that following the long recognised need for elimination of numerous patterns they have reduced their range by approximately 33⅓ per cent.

Gas for Water Heating

The Margate Corporation has chosen gas as being the most suitable fuel to provide hot water in over 200 houses and flats in course of erection on two estates in the Margate area.

Distributor Appointed

F. Hills and Sons, Ltd., have announced the appointment of Rowe Bros. and Co., Ltd., 39/45, Victoria-street, Bristol, 1, as an accredited distributor to cover the following territory: Gloucester, Bristol, Somerset, Wilts, Hants, Berks, Oxford, Hereford and South Wales. Rowe Bros. and Co., Ltd., will be pleased to supply information and samples of Duramel upon request. They have also been appointed sole distributors for Aga Veneers, Ltd., in the south-west area and Berkshire.

New Offices

It is announced by Shell Chemical Co., Ltd., that all Head Office Departments, with one exception, are now located in the Company's new building at Marlborough House, 15/17, Great Marlborough-street, London, W1. The telephone number is Gerrard 0666, and the telegraphic address: Shellchem, Wesdo, London. The Plastics and Resins Department has remained at Norman House, 105/9, Strand, WC2.

SAFETY GLASSES.— The 'Itex' Safety Spectacle No. 424 *is made from strong pliable nylon fitted with transparent protective sideshields; it is collapsible to fit into the wearer's pocket. It is fitted with specially strengthened curved acetate lenses. Made by Safety Service Co.,* 34*a, Stonebridge Park, NW*10

OVERSEAS BUILDING

From Our Own Correspondents

ARGENTINA.—The President of the Export-Import Bank has given details of the uses for which the balance of the Ex-Im Bank credit of $100m. is now intended. Several million dollars are to be spent on road-making machinery and equipment and vast sums are also to be invested in projects now being studied for the modernisation of ports and improvement of river navigation... A credit of about $80,000,000 has been established in favour of the Water and Electric Energy Board for the following developments: hydro-electric stations, thermo-electric stations, high tension lines, dams, and irrigation. Equipment brought in temporarily for the work will be free of customs duty.

BRITISH EASTERN CARIBBEAN.—It has been announced that the Demerara Bauxite Company, of British Guiana has decided to proceed with the erection of a $60m. plant for the production of alumina at Mackenzie and the construction work, it is understood, will be in the hands of a new subsidiary of Sprostons, Ltd., of British Guiana, styled 'Sprostons Construction Company' whose offices are at Hincks-street, Georgetown, Demerara. The funds for the project will be made available by the parent company, The Aluminium Company of Canada. It is expected that construction will take 2½ years during which time it will employ from 1,000 to 1,500 people. . . . A sugar factory extension costing $3m. to be erected shortly at La Bonne Intention, Demerara, is to have a floating basement foundation which will be the first of its kind in British Guiana. It will be constructed by Soil Mechanics, Ltd., a subsidiary of John Mowlem and Co., Ltd., for Bookers Sugar Estates, Ltd. . . . Pan-American Industries Inc., of 301 Church-street, Georgetown, BG, are to establish a factory at Atkinson Field for the production of concrete building blocks, to help in meeting the increased housing demand in the Colony. . . . Several large-scale irrigation and drainage projects are included in the scheme for which provision is made in the British Guiana Five-Year Development Plan, and some British engineers have already visited the Colony to look into the possibility of participating in these developments.

BURMA.—It is reported that out of 24 tenders received by the Union of Burma Railway Board for the rebuilding of the Sittang bridge destroyed during the war four have been put on a short list. . . . Requests have been received in the UK from the Burma Government for the extension of the services of the Colombo Plan architect attached to the National Housing Board and the mechanical engineering lecturer at Rangoon University.

DOMINICA.—The Dominican Republic has completed plans for the construction of the Tavera Dam across the river Yaque del Norte. The dam will eventually increase electricity supplies and provide water for the irrigation of large areas in the Cibao, the principal agricultural region of the country. Valued at about £5,400,000, the project comprises a 250-ft. high arch dam capable of holding 30,800 million gallons of water.

The calculated capacity of the proposed hydro-electric plant is 40,000 kilowatts. Annual output will amount to 58m. units in years when water reserves are low, rising to a maximum of 120m. units in normal years. For irrigation, the dam will increase capacity in the valley of La Vega Real by more than one million acres.

HONG KONG.—The Colony's 1957 budget, just approved by Government, includes an all-time record figure of $150m. expenditure on Public Works (non-recurrent) projects. This figure represents 27 per cent. of the whole budget, and does not include for maintenance of existing installations. The major items are $32m. for the extension of Kai Tak Airport at Kowloon (consulting engineers, Scott and Wilson; architects, Ramsey, Murray and White, both of London), and $24m. for completion of the Tai Lam Chung water scheme (consulting engineers, Binnie, Deacon and Gourley, London).

Resettlement housing projects will account for $20m. of expenditure, mostly on multi-storey blocks of dwellings. Eleven new primary schools are planned, and Government has announced that as the Architectural Office of the PWD will not be able to deal with the whole programme, most of these schools will be designed by private architects.

Included in the budget is a nominal sum of money to commence work on a new reservoir in the Shek Pik Valley on Lantau island, estimated finally to cost $150m. and take six years to complete.

HONG KONG.—The Dean of St. John's Cathedral, the Very Rev. F. S. Temple, is in the United Kingdom to seek designs and estimates for new stained glass windows for the North and South transepts.

Designed by Chan and Lee, ARIBA, authorised architects, two new wings of 10 storeys each, providing a total of 202 extra beds, are under construction at the Tung Wah Hospital. The Hospital authorities are also planning to build quarters for their medical staff.

IRAQ.—The Development Board has issued invitations to tender for the following: Pumps and machinery for Greater Mussayib irrigation project; construction of irrigation pumping stations for Greater Mussayib irrigation project; power transmission line—string insulator units; construction of the Abu Sukhair-Najaf-road; land development—South Mosul housing scheme; power transmission line—fittings and accessories; air-conditioning for the new Bagdad Museum.

The Directorate-General of Municipalities has issued invitations to tender for the following: Water supply scheme for Na'maniyah; water supply scheme for Suq ash Sheyukh.

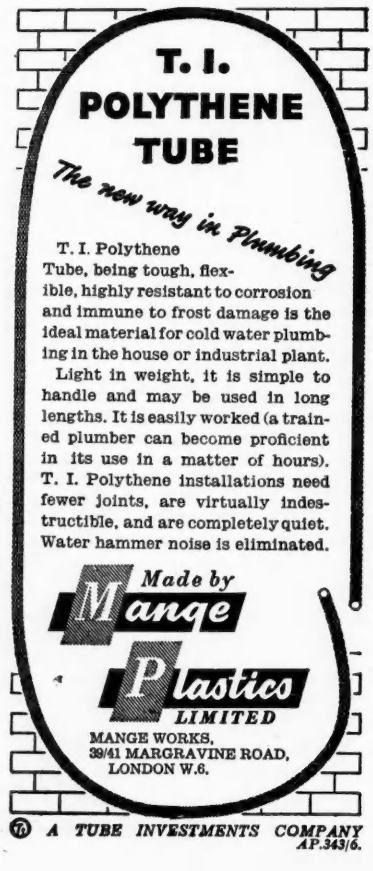
JAPAN.—A nine-storey office building, estimated to cost about $US17m. is to be erected in the Tokyo business district. The architects, the Mitsubishi Land Co., claim this will be the largest building in the Orient and the sixth largest in the world, housing 20,000 people.

MALAYA. — The Commonwealth Development Finance Corporation, through its Director of Operations, Mr. G. S. Samways, has announced its intention of investing heavily in the industrial development of Malaya after August 1, when independence is achieved. The investment would be in loans for the establishment of new industries.

NEW ZEALAND.—The £26m. hydro-electric power station at Benmore, on the Waitaki River, South Island, will be started this year. Benmore, which is part of a huge scheme to harness the Waitaki River to provide 1,500,000 kilowatts, is due to be completed by 1965. The president of the Power Supply Authorities' Association said the financial aspects of carrying out the power proposals, which are estimated to cost £500,000,000 in the next 20 years, were also reviewed. . . . To bring New Zealand's geothermal power output at Wairakei up to about 250,000 kilowatts is estimated to cost £21,680,000 by the British consulting engineers, Merz and McLellan, who have investigated for the Government Wairakei's geothermal resources and extension of the power station.

NORTH BORNEO.—A broadcasting station is to be built on the North-West coast, with a modern Broadcasting House in Brunei, transmitting station at Tutong, and a small studio at Seira. The Marconi Co., of Chelmsford, Essex, will plan and build the whole system.

NORWAY.—The Norwegian Government last week established a Power Advisory Committee, which is to make a survey of the country's power requirements over a period of years and of the quickest and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cheapest means of fulfilling them, including the development of nuclear power. Mr. Trygve Lie, former Secretary General of the United Nations and now County Governor of Oslo and Akershus has been appointed Chairman of the Committee. . . . A plan for improving road connections in Western Norway at a cost of £12,500,000 was announced recently. It covers the area between Trondheim and Egersund.

PORTUGUESE WEST AFRICA.—It is reported that a new railway station is to be built at Nova Lisboa. . . . Tenders for the construction of the second stretch of the Congo Railway between Panguila and Lifune have been called for. Specifications are not available but may be consulted at the offices of the Direccao-Geral do Fomento in Lisbon and of the Comissao Administrativa do Fundo de Fomento in Luanda. . . . Construction of two new highways has been announced. One, of 123 kms., will connect the rivers Sanguissa and Nhia; the other, of 70 kms., will join the Quanza and the Luambaza. Total expenditure envisaged is in the region of £750,000. . . . Tenders have been called for the construction of a bridge over the river Lucala at Cassoalala near Dondo. Copies of these specifications are not available but may be consulted in the Public Works Department in Luanda. . . . Owing to the increased demands on supplies a new water installation is to be erected at a cost of just over £1m. . . . Companhia de Combustiveis de Lobito has been authorised to begin work on a new oil refinery and port in Luanda.

SINGAPORE.—What is believed to be the largest single contract of its kind ever placed anywhere in the world has been awarded to Associated British Engineering, Ltd., by the Singapore City Council. This is for a free-piston power plant at the St. James Power Station, worth £1,500,000 sterling. Consulting engineers are Preece, Carden and Ryder, of London.

SINGAPORE.—Eight types of bungalows in a price range of from £3,500 to £4,200 are to be built by Eastern Oceanic Corporation Ltd. An estate of 212 houses at Bukit Timah-road will be known as Namly Park. The bungalows are designed in American style. Architects are Ferrie and Lobban, of Singapore. A housing scheme for the middle income group on a site at Pasir Panjang is also being planned by Eastern Oceanic Ltd. A cinema, to be known as the Metropole, is being built at a cost of £230,000 in Chinatown at the junction of Tanjong Pagar-road and Maxwell-road, Mr. Ho Khee Young, director of the owners, Kong Ngee Co., Ltd., said that the cinema is modelled on the latest US design. The four-storey, air-conditioned theatre will have underground parking space for more than 100 motor-cars, and there will be a night-club on the top floor. It will accommodate more than 1,000 people. The building will have a spiral staircase enclosed in glass.

Building work for the new Singapore Polytechnic has been divided into two contracts—one for workshops and a nautical school, and the other for the two main blocks consisting of the administrative section, a lecture hall, a library, class-rooms, and laboratories. In both instances the contracts have gone to the lowest tenderers. Nanyang Structural Co., Ltd., has been awarded the contract for workshops and nautical school at a cost of about £90,000; there were 15 tenders. The contract for the two main blocks has gone to Loke Hong Kee for about £410,000; there were nine tenders.

SOUTHERN RHODESIA.—In Bulawayo building plans passed during February totalled 91 for a total value of £189,417, state Barclays Bank DCO and Overseas Review. Work will start shortly on the £1,000,000 Umzingwane Dam project, about 30 miles from Bulawayo. The dam will hold approximately 10,000m. gallons of water.

SWEDEN.—The Grangesberg Company has announced plans for the construction of a new iron and steel works at Oxelsund, south-east of Stockholm. The project includes a considerable extension of the existing coking plant and pig iron works and the erection of a steel works and rolling mill for heavy plate. Work is to start shortly on the construction of a sulphate factory at Munsteras on the South Baltic Coast for the Swedish Forestry Owners Cellulose Company.

TAIWAN.—The Chinese Nationalist Legislative Yuan has appropriated $30m. (Taiwan currency) for extending the shipyards at Taipeh. The Ingalls Shipbuilding and Ironworks Corporation of Alabama, Mississippi, are to carry out the work there over the next three years.

THAILAND.—Included in the 1957 allocations from the Treasury for construction work are the following projects: expansion of the Don Muang commercial airport; construction of fuel storage stations; erection of glass factory; expansion of telephone exchanges; port construction including dredging; railway expansion and highway construction; the Yanhi Water Power Project; public housing schemes and work on development in Bangkok, Cholburi; building of power stations at Bangkok; electric works reconstruction. The burnt down area, about 170 acres, result of a fire at Pitsanuloke, is to be replanned with adequate roads and public utilities, a new bridge across the river, a waterworks, 100 two-storey buildings, and a large water tank to facilitate fire-fighting. Ten civil airfields are to be built or extended under the ICA Aid Programme for which $3,390,000 has been provided in the ICA budget for Thailand for the current fiscal year. According to the Prime Minister the Thailand Steel Company has been granted a concession to set up a foundry in Chiengkarn District, Loey Province.

VENEZUELA.—A contract worth nearly £4m. has been awarded to Constructora Brillembourh Villegas Asociados for an earth dam for the first generator for the Caroni Hydro-Electric Plant. The dam is to be finished in time to permit the first section of the plant, which will generate 50,000 kW. to operate by April, 1958. The second and third sections, which will produce 100,000 kW. are to operate by July 31, 1958, and the fourth is to operate by January 31, 1959. Studies are being made for a dam to be built in the Necuima region, extending over 9,000 square kilometres, and the topographical studies are expected to be completed by the end of July this year. The ultimate aim will be to exploit the entire hydro-electric potential of the Lower Caroni, estimated at 4,000,000 kW. Bids have been solicited for 66 steel bridges for roads in the interior. The Ministry of Communications has invited bids for a nation-wide long-distance telecommunications system. Closing date is May 15. The following credits for building work have been published under the heading of Venezuelan Government Finance: Water works £2m.: construction, repairs of roads—£1,500,000: National hotels—£1,750,000: Slum clearance at Banco Obrero—£9m.: Creation of tourist zones—£1,500,000: Guarico River irrigation scheme—£1,500,000: Housing and roads—£2,500,000.

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New Oil Refinery for Turkey

Plans to build a new 65,000-barrel-a-day refinery in Turkey were announced recently by Mobil Overseas Oil Company, Inc., a subsidiary of Socony Mobil Oil Company, Inc. The refinery, scheduled to go on stream in 1960, will be built, as requested by the Turkish Government, by a group of companies composed of Mobil Overseas Oil Company, Inc., the British Petroleum Company, California Texas Corporation and the Royal Dutch Shell Group under arrangements recently concluded with the Turkish Government.

The refinery will include, in addition to processing units, loading and unloading facilities, wharves, docks, tanks, transfer lines, electrical distribution systems, telephone systems, radio facilities, water and drainage systems, office buildings, warehouses, maintenance shops, roads and railways.

It is estimated that the cost of the new refinery, excluding the cost of land, will be approximately £17m. which will be provided by the four companies. Of this nearly £4m. will be spent in Turkey. The exact location of the refinery will be determined before the end of June.

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

H. J. Smith (Ongar), Ltd. 580612.) Regd. March 25. Stondon-rd., Ongar, Essex. Bldrs. and contrs. Nom. cap.: £100. Dir.: H. J. Smith.

William Morris & Son (Builders), Ltd. (580640.) Regd. March 25. Tattenham Corner Station, Epsom Downs, Surrey. Bldr., etc. Nom. cap.: £5,000. Permt. dir.: W. C. Morris.

G. Brookes & Son, Ltd. (580661.) Regd. March 25. Bunbury, nr. Tarporley, Ches. Bldr. and contr., etc. Nom. cap.: £15,000. Permt. dir.: F. Brookes.

Tomlinson & Wood, Ltd. (580680.) Regd. March 25. 264, Manchester-rd., Warrington. Bldrs. and contrs. Nom. cap.: £5,000. Dir.: J. Wood.

Ayres, Williams & Bennett, Ltd. (580690.) Regd. March 26. 119, Rayleigh-rd., Eastwood, Essex. Bldrs. Nom. cap.: £300. Dir.: J. S. Ayres.

Bickerstaffe Son & Eccles, Ltd. (580692.) Regd. March 26. Bldrs. and contrs. Nom. cap.: £4,000. Dir.: H. Bickerstaffe, 46, Victoria-st., Lytham.

E. B. Holben, Ltd. (580709.) Regd. March 26. 28, Ampthill-rd., Flitwick, Beds. Genl. bldr. and contr. Nom. cap.: £1,000. Dir.: E. B. Holben.

J. H. Day (Farlington), Ltd. (580731.) Regd. March 26. Waterworks-rd., Farlington, Hants. Bldrs. Nom. cap.: £5,000. Dir.: J. H. P. Day.

P. O'Connor (Builders), Ltd. (580757.) Regd. March 26. 25, Atkinson-rd., Urmston, Lancs. Nom. cap.: £100. Dir.: P. O'Connor.

R. M. Brookes, Ltd. (580762.) Regd. March 26. The Square, Lenham, Kent. Bldr. and contr. Nom. cap.: £1,000. Dir.: R. M. Brookes.

W. R. Farrington & Co., Ltd. (580778.) Regd. March 26. Red Roofs, High-lane, Alsagers Bank, Staffs. Bldr. and contr. Nom. cap.: £1,000. Permt. dir.: W. R. Farrington.

P. R. Gillatt, Ltd. (580812.) Regd. March 26. Woodbine-hse., West End, South Cave, E. Yorks. Bldrs. and contrs., etc. Nom. cap.: £10,000. Permt. dir.: P. R. Gillatt.

R. D. Peters, Ltd. (580814.) Regd. March 26. 72, Bostall Park-ave., Bexleyheath. Bldrs. Nom. cap.: £1,500. Dir.: R. D. Peters.

Collier Bros., Ltd. (580827.) Regd. March 26. 61, Harpur-st., Bedford. Bldrs. Nom. cap.: £1,000. Dir.: D. G. Collier.

Edgby Bungalows, Ltd. (580830.) Regd. March 26. 2, Belmont, Shrewsbury. Bldr. Nom. cap.: £1,000. Dir.: J. Edgby.

Jessopp Brothers (Bournemouth), Ltd. (580835.) Regd. March 26. The Homestead, 215, East Howe-lane, Bournemouth. Bldrs., etc. Nom. cap.: £100. Dir.: A. G. F. Jessopp.

Freedman & Fox, Ltd. (580887.) Regd. March 27. 73, Durlston-rd., E5. Bldrs., etc. Nom. cap.: £100. Dir.: S. G. Fox.

J. Heselden (C.R.P.) & Sons, Ltd. (580907.) Regd. March 27. Ecklenville, Goldsel-rd., Swanley, Kent. Bldrs. Nom. cap.: £3,000. Dir.: J. Heselden.

L. R. Reed & Son, Ltd. (580911.) Regd. March 27. Roubrique, Uxbridge-rd., Hillingdon, Middx. Bldrs. and contrs. Nom. cap.: £5,000. Dir.: L. R. Reed.

Milner Bros. (Builders), Ltd. (580912.) Regd. March 27. 51, Crutchfield-lane, Walton-on-Thames. Nom. cap.: £2,000. Dir.: S. F. Milner.

White Bros. (High Wycombe), Ltd. (580956.) Regd. March 27. 161, West Wycombe-rd., High Wycombe. Bldrs. Nom. cap.: £5,000. Dir.: A. G. White.

G. H. Emerson, Ltd. (580969.) Regd. March 27. Ashdene, The Avenue, Healing, Lincs. Bldg. and civil engng. contrs. Nom. cap.: £5,000. Dir.: G. H. Emerson.

E. A. Waller, Ltd. (581017.) Regd. March 28. Ocean Villa, Falmer-rd., Saltdean, Brighton. Bldrs. Nom. cap.: £100. Dir.: E. A. Waller.

Fosspoint Building Co., Ltd. (581023.) Regd. March 28. 156, Strand, WC2. Nom. cap.: £100. Sub.: Jean Herbert.

The SCOTTISH BUILDER

New Imperial Dock for Leith

LEITH Dock Commissioners have accepted the tender of John Laing and Son, Ltd., of London, to undertake the construction of the new Imperial Dock grain warehouse extension at a cost of £300,000. Their tender was the lowest of eleven firms offering for the work, including seven firms with headquarters in Scotland.

Consulting engineers are Messrs. Kinnear and Gordon, Edinburgh, who designed the extension in co-operation with the Commission's chief engineer, Mr. M. C. White. The development will provide storage accommodation for an additional 15,000 tons of grain. This, with the inclusion of Rank's new Caledonia Mill, will give the port a storage capacity of 71,000 tons as against the pre-war figure of 36,000 tons.

The Commission undertook the construction of new storage facilities in July last; to meet this situation large-scale diversion of about two miles of complicated railway tracks was initiated. Foundation piling work is being undertaken by Melville Dundas and Whitson, Ltd., of Glasgow, who are expected to complete this stage at the end of April.

Steelwork for the project is now on the site, allowing for speedy construction. Handling machinery will be supplied by Simon Handling Engineers, Ltd. The new extension should be fully in use by August, 1958.

St. Andrews Public Inquiry

MR. J. M. AITKEN, ARIBA, AMTPI, chief architect to the Ministry of Health and Local Government of Northern Ireland, is to be planning assessor to the Commissioner for the remainder of the inquiry into the objections against amending the development plan for St. Andrews to allocate a site for university purposes in the centre of the town. The late Sir Patrick Abercrombie was acting as assessor at the time of his death.

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SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from February 4, 1957. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen 4s. 4½d.; Labourers 3s. 10d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours. s.	d.
1st	25	48	1½
2nd	33⅓	64	2
3rd	50	96	3
4th	66⅔	128	4
5th	75	144	4½

For female labour, the rates are:

	s.	d.
Operatives on craft operations (at end of probationary period)	3	10
Operatives on labouring operations (at end of probationary period)	3	4

The inquiry has already lasted eight days, and is to be resumed on April 30 when it is expected that Professor Sir William Holford will be giving evidence on behalf of the University of St. Andrews.

Home Heating Advice Centre

A NEW Coal Utilisation Council information centre, to serve the East of Scotland was opened by Lady Barnett at 9 Atholl-place, Edinburgh, on April 9. This will be the second CUC information centre in Scotland. The first was opened in Glasgow in 1952 to serve the industrial and commercial community and the public in the West of Scotland. Architect in charge of the conversion of the premises was T. Waller Marwick, FSA, FRIBA, a past president of the Edinburgh Architectural Association.

History Exhibition

AN EXHIBITION illustrating the work of the Ancient Monuments branch of the Ministry of Works, the Historic Buildings Council for Scotland, and the Scottish National Buildings Record, in preserving and recording Scotland's heritage of ancient monuments and historic buildings, opened at the Abbey Strand, Edinburgh, on April 15. The exhibition will be open until the autumn.

NEW BUILDINGS

Lanarkshire.—Plans in hand for petrol station for Lanark Provident Co-operative Socy, Ltd. A: Whyte & Barrie (L), 38, High-st., Lanark.

Leven.—Plans approved for garages for the Leven Reform Co-operative Socy, Ltd., at Wagon-rd. A: L. A. Rolland (F), Albion-hse., Shorehead.

Leven.—Plans in hands of own A for laboratories adjoining their Duric Foundry, Leven, for Henry Balfour & Co., Ltd.

Perthshire.—Plans in hand for alterations at Kinnoull Protestant primary sch., Perth, est. cost £28,000. A: I. A. Moodie (A), York-pl., Perth.

Rutherglen.—Plans approved for 16 houses at Hillend-ave. A: J. Austen Bent, 15, Palmerston-pl., Edinburgh 2.

Springboig.—Plans in hand for comprehensive development scheme. A: S. McColl (F), County-bldgs., 23, Beckford-st., Hamilton.

Stirlingshire.—Plans in hand for scheme at Bansford, Grangemouth, est. cost £665,000, for the South of Scotland Electricity Board, Glasgow. A. Erskine, engineer, Sauchiehall-st., Glasgow C3.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

MAY 2.

*†**Birmingham City C.**—Alterations to Digbeth Institute. City A. Dep. £2 2s.

MAY 3.

*†**East Sussex CC.**—Extension to Park House, Hove. County A, County Hall, Lewes.

MAY 4.

*†**Essex CC.**—Additional classrooms, Boys' and Girls' departments, Moulsham county prim. sch., Chelmsford. County A.

*†**Essex CC.**—Additional accommodation at Gaynes sec. sch., Upminster. County A.

*†**Essex CC.**—Erection of nurses' home at Ardleigh. County A.

MAY 7.

*†**Birmingham City C.**—Installation of four electric passenger lifts to serve 88 flats at 'Midville Court,' Edgbaston. City A. Dep. £2 2s.

MAY 11.

Bradfield RDC.—148 dwellings, roads, sewers, etc., at Three Firs, Burghfield, nr. Reading. C. Council Offices, 26, Bath-rd., Reading. Dep. £2 2s.

*Havant and Waterloo UDC.**—Suite of three offices at Town Hall. E&S, 1, Park-rd. North.

MAY 13.

*Essex CC.**—Public conveniences and keepers' store, Weald Park, South Weald, Brentwood. County Land Agent and Valuer, 69, Duke-st., Chelmsford.

*†**Winchester City C.**—82 dwellings at Winnall Manor estate, contract No. 3. A. S. Wilson & Ptnrs., 8, Storey's-gate, Westminster, SW1. Dep. £2 2s.

MAY 15.

*New Sarum City C.**—46 dwellings at Bishopdown estate, Salisbury. City E. Council House, Bourne Hill, Salisbury. Dep. £2 2s.

MAY 17.

*†**Hayes and Harlington UDC.**—62 dwellings at Park Farm estate. E&S.

MAY 18.

Rushden UDC.—20 houses and one block of flats on Hayden-rd. site. E&S.

MAY 21.

*Bournemouth CB.**—Erection of houses and bungalows in 3 contracts at West Howe estate. Boro' A (Room 106), Town Hall. Dep. £2 2s. each contract.

*Burton upon Trent CB.**—Re-roofing and re-cladding of Corporation Transport garage, Horninglow-st. Boro' A.

MAY 22.

*Barnes BC.**—28 bathrooms and hot water installations at Alexandra-rd., Mortlake. BS.

*†**Guisborough UDC.**—302 houses with ancillary works at Hutton-la. estate. C, Council-chmbrs. Dep. £2 2s. Tenders by July 4.

MAY 27.

*Reading CB.**—Six shops with maisonettes over, public conveniences and 11 garages at Northumberland-ave. Boro' A. Dep. £2 2s.

*Wallasey CB.**—81 houses, 36 flats and four bungalows at Leasowe. Boro' A. Dep. £1 1s.

*West Riding CC.**—(1) Caretaker's house, Goole Kingsway infants' sch.; (2) conversion of playshed for additional classroom at Ossett county sec. sch.; (3) repair and adaptation of several brick, concrete and asbestos huts at Parlington sec. sch. Deputy County A.

MAY 28.

Sutton and Cheam BC.—12 houses at various sites. Boro' E&S. Dep. £3 3s.

MAY 29.

*Ilford BC.**—Modernisation of three cottages at Fencepiece-rd. BE. Dep. £3 3s.

MAY 30.

*Chertsey UDC.**—56 houses and 18 garages at Free Prae-rd. scheme 'B,' Contract No. 59. E&S. Dep. £2 2s.

JUNE 3.

*Wood Green BC.**—12 flats at Norman-cl. BE. Dep. £1 1s.

JUNE 5.

*Southend-on-Sea CBC.**—17 dwellings at Hornby-ave., site No. 7. Boro' A, 30, Alexandra-st. Dep. £2.

JUNE 14.

*†**Rotherham CB.**—Extensions to tech. col., approx. cost £400,000. Director of Education, Education Office, 21, Moorgate-rd. Tenders by Sept. 4.

PAINTING, MATERIALS, ETC.

APRIL 30.

*†**Plymouth City C.**—Heating and ventilating of Guildhall. City A: Seymour-rd. Dep. £3 3s.

MAY 4.

*†**Chatham BC.**—Repainting and redecorating of main hall at the Town Hall. BE&S. Dep. £2 2s.

*Gravesend BC.**—External redecoration of 185 houses adjacent Valley-dr., and three flats and estates office, Kitchener-ave. BE&S, 6, Woodville-terr. Dep. £2.

MAY 8.

*†**Durham CC.**—Heating and domestic hot water installations at Hebburn tech. col. County A.

*†**Wimbledon BC.**—Painting of street lamp standards, brackets and fittings. BE&S. Dep. £2 2s.

MAY 15.

*Birmingham City C.**—Installation of central heating and primary hot water services in five blocks of seven-storey flats at Meadway, Kents Moat Estate. Contract No. 527. City E&S. Dep. £2 2s.

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MUNICIPAL AND CIVIL ENGINEERING WORKS, ETC.

MAY 11.

Huntingdonshire CC.—Reconstruction of Hail Bridge over River Kym on Great North Road, A.1 (Section 9), including demolition of existing twin-arch bridge and flood arches and construction of new r.c. bridge with prestressed concrete deck and 500 yd. of approach roads. County S. Dep. £10.

MAY 13.

Dorchester RDC.—2,500 lin. yd. of 3 in. dia. spun-iron pipes and fittings at Dewlish. W. Herbert Bateman & Ptnrs., Chesterfield-hse., Batheaston, Bath.

Hemsworth RDC.—Ackworth, Badsworth and Thorpe Audlin sewerage. 5,900 lin. yd. of granite concrete and glazed stoneware sewers, 9 in. to 6 in. dia. manholes, sewage pumping station and sewage disposal works, etc. Willcox, Raikes & Marshall, engrs., 33, Gt. Charles-st., Birmingham, 3. Dep. £5 5s.

MAY 16.

Caistor RDC.—Sewage works and 900 ft. sewer at Brocklesby. S. Dep. £2 2s.

MAY 17.

East Suffolk and Norfolk River Board.—New sea wall from Waxham to Horsey, 1⅛ mile long. Ch. E. to Bd. Dep. £5 5s.

MAY 20.

Cannock RDC.—Roads and sewers at Littlewood-la. housing estate, Cheslyn Hay, comprising 1,700 yd. of 6 in to 12 in. foul and S.W. sewers and 2,150 sq. yd. of pitched roadway foundations. E&S. Dep. £2 2s.

MAY 24.

Wigston UDC.—2,900 lin. yd. stormwater sewers, 9 in. to 30 in. dia. Pick, Everard, Keay & Gimson, engrs., 6, Millstone-la., Leicester.

MAY 27.

Whitchurch UDC.—3,220 lin. yd. of 24 in., 21 in. and 18 in. dia granite concrete pipe sewers, 100 yd. of 9 in. dia. glazed stoneware pipe sewers, manholes, sewage disposal works, sludge pumping stations, store, etc. Willcox, Raikes & Marshall, engrs., 33, Gt. Charles-st., Birmingham, 3. Dep. £10 10s.

JULY 1.

Ballymoney RDC.—Rapid gravity filtration plant, capacity 1¼ million gallons daily. Waterhouse & Rounthwaite, Cel's consig. engrs., 165, Westmorland-rd., Newcastle upon Tyne. Dep. £10.

GENERAL BUILDING WORK

(LONDON)

Bermondsey.—APPOINTMENT.—F. S. Snow & Ptnrs., Monro-bldg., Wellington-st., WC2, have been appointed consulting engineers for the flats to be erected at Block 5, Abbey-st. (North) site, for the MBC.

Greenwich.—SITE ACQUISITION.—The Minister of Housing and Local Government has confirmed the MBC's compulsory purchase order which provides for the acquisition for housing purposes of the rectangular area bounded by Vanbrugh Park, Westcombe Park-rd., Vanbrugh Park-rd. and Vanbrugh Park-rd. West.

Hackney.—HOUSING SCHEMES.—The Housing and TP Com. has approved proposals for the development of various sites, as follows:—

A large detached house, with garage and floor over, known as 125 Clapton Common, E5, with garden and backland extending to over one acre, is to be redeveloped by conversion of the house into seven flats, with community room, storage, etc., and the building of one four-storey block of 20 flats and one three-storey block of 15 flats on the garden site. The total cost of the building works, including fees, is estimated at £65,475.

On the bombed site of the Methodist church at the corner of Cassland-rd. and Queen Anne-rd., E9, it is proposed to build a four-storey block of six three-bedroom maisonettes and four three-bedroom flats, with tenants' and porters' stores and six lock-up garages in the basement. The estimated cost is £29,950.

14 flats in a five-storey block, with lift, and nine lock-up garages, estimated to cost £40,900, are proposed at the Upper Clapton-rd. (No. 4) site.

At the Tottenham-rd. site, which is part of an area bounded generally by Kingsland-rd.,

Balls Pond-rd., Southgate-rd. and the canal, three blocks of four-storey maisonettes and a 12-storey block of flats, providing a total of 120 dwellings, are proposed. The estimated cost is £350,000.

The Boro' E&S is G. L. A. Downing, OBE, MICE, AMIMechE, MIMunE.

Hammersmith.—SCHOOL.—A new school to take the place of St. Paul's Girls' junior school is to be built on a site just south of Bute House (the existing school) and is to be called St. Paul's Girls' preparatory school. The architect is B. L. Adams (A), 1, Arlington Cottages, Sutton-la., Chiswick, W.4.

Surbiton.—HOTEL.—Plans for the rebuilding of the Southampton Hotel, next to Surbiton railway station, for Spiers & Pond, Ltd., have been approved by the Kingston licensing justices. The plans provide for a banqueting hall and ballroom, dining-room, bars and coffee bar and 50 bedrooms. The alterations are estimated to cost £175,000. The architects are Tiltman & Howard (F/F), 38, East-st., Brighton.

Walthamstow.—MAISONETTES AND GARAGES.—The Reconstruction and Housing Com. has approved a scheme for the development of a site at Whipps Cross by 22 two-bedroom maisonettes in four storeys and 10 garages. The Boro' Architect, E&S is P. V. Marchant, MICE, MIMunE.

Westminster.—CLUB.—The rebuilding of the bombed Naval and Military Club, 94, Piccadilly, W1, is expected to begin in July with the reinstatement of the Georgian façade. The work is estimated to cost £50,000. The architect is Cubitt Nicholls (F), FRICS, 37, Norfolk-st., Strand, WC2.

Westminster.—FLATS, WORKROOMS, OFFICES, SHOPS AND STORES.—The Housing Com. has approved a preliminary layout and sketch scheme for the redevelopment of the site of about ¾ acre between Berwick-st., Hopkins-st., Kemp's-ct. and Peter-st., W1 (not including the 'City of London' PH). Facing Berwick-st., a seven-storey block, with a basement for commercial storage, 14 shops on the ground floor, accommodation on the first floor for use as showrooms or offices and, on the upper floors, 11 one-room and 44 two-room flats. At the Kemp's-ct. end, there will be a wing of four storeys and at the Peter-st. end, a wing of three storeys, containing two three-bedroom and two four-bedroom flats. The Com. recommends that Riches & Blythin (F/F), 16, Northumberland-ave., WC2, should be appointed as architects to collaborate with the Director of Housing, E. J. Edwards (F), FRICS, in the development of the scheme.

(PROVINCIAL)

Bacup.—Ribble Cabinet Co., Ltd., 26, St. James-st., propose rebuilding of premises.

Barrow-in-Furness.—BC to prepare plans for 24 flats at Margate-st., 20 at Farm-st., 20 at Holker-st., eight at Rainey Shop site, North Walney, eight at Bridgegate-ave., and eight at the Friars Hotel site, Abbotsmead.

Bedlington.—UDC's £690,000 scheme for reorganisation of town's sewerage system is to be subject of Ministry inquiry. Plans by S: A. K. Dennis, Council Offices, Bedlington.

Birkenhead.—BC to invite tender from G. Wimpey and Co., Ltd., for 105 dwellings at Overchurch estate.

Bishop Auckland.—Barrett, Sons & Ptnrs., 83, Borough-rd., Middlesbrough, have been appointed QS for proposed operating theatre suite at Bishop Auckland general hospital, for Newcastle Hospital Board, Benfield-rd., Newcastle. Board's Chief A: P. H. Knighton, MBE (A).

Blackburn.—TC proposes improvements to Central Library, £12,000 est.—A. Mason, 32-34, Church-st., proposes erection of new two-storey building on site of his existing shop. Inquiry held.

Blyth.—Boro' E, D. W. Foster, to prepare plans for redevelopment of land in Phœnix-st. area.

Bolton.—EC proposes new infants' sch. off Red-la.—TC approved plans: 64 bungalows at Bury-rd., nr. Lower Moss farm, for A. D. Primrose, 556, Halliwell-rd., Bolton; extensions to shopping block at Newport-st. for Battersbys (Bolton), Ltd.; alterations and extensions at showrooms, 257, Halliwell-rd., for A. V. Brookfield.

Bredbury and Romiley.—UDC proposes 30 houses at Compstall.

Brighouse.—BC approved plans (outline application) for dwelling houses at Halifax-rd. and Mill-la., Slead Syke, for James Wadsworth & Sons, Ltd.—Hammonds United Breweries, Ltd., seek site at Rastrick Field-la. estate for new licensed premises.

Carlisle.—TC approved plans for new warehouse at King-st. for J. Turner. A: S. L. Jack (L), 35, Warwick-rd., Carlisle.

Chester.—TC to prepare plans for block of shops at Newton Hall estate.

Chesterfield.—EC proposes new Youth Centre to west of Springbank-rd.

Coventry.—TC proposes erection of multi-storey blocks of flats in Central area.—Seeks Ministry approval for inclusion of following in 1958 programme:—Rebuilding of St. Michael's C of E sch.; first instalment of Mount Nod prim. sch.; first instalment of Ernesford Grange prim. sch.; two nursery schools at Willenhall Wood area; instalment of Cardinal Wiseman RC sec. sch.; second instalment of Foxford sec. sch.; rebuilding of City of Coventry sch.; instalment of C of E sec. sch.; second instalment of Coundon Court sec. or first instalment of Keresley sec.; residential special sch. to replace Town Thornes; erection of Bagington Field sch. and new day special sch. for ESN children.

Cumberland.—CC's school-building programme for 1958-9 includes sec. schools at Aspatria, Distington, Egremont and Penrith. Plans by County A, J. H. Haughan, Portland-sq., Carlisle.

Cumberland.—EC to spend £100,000 on erection of new school at Skelton; £10,000 for improvements for Langwathby C of E school; £10,000 on additions to Penrith Queen Elizabeth grammar school. County A: J. H. Haughan (F), Portland-sq., Carlisle.

Darlington.—EC proposes, subject to Ministry approval, to include following in its 1958-9 building programme:—Jun. schools at Polam Hill and Firth Moor, infants' school at Abbey-rd., RC infants' and jun. sch., sec. mod. tech. sch. at Branksome.—Plans by Boro' A. E. A. Tornbohm, for additions to Queen Elizabeth grammar sch. have been approved.—Bussey & Armstrong, Ltd., builders, Brinkburn-rd., Darlington, propose housing developments on land at Hummersknott.—TC is to build roads on remainder of southern section of Hummersknott estate and sites for houses are to be sold to builders.—Boro' A has prepared plans for first stage of scheme for additions to public abattoir.

Fylde.—RDC proposes eight bungalows for elderly people at Warton.

Garstang.—RDC proposes 12/14 aged persons' bungalows at Kepple-la. estate, Marshaw-gr.

Gateshead.—EC to carry out additions to 'The Cedars,' special school. Boro' E: G. F. Winters, Municipal-bldgs., Swinburne-st.

Hazel Grove and Bramhall.—UDC approved plans for 90 houses, roads and sewers at Mill-la., Chatsworth-rd., Capesthorne-rd. and Capesthorne-close, Hazel Grove, for Frank Blurton, Ltd.

Hebburn.—A. Reyrolle & Co., Ltd., electrical engineers, propose to make major extensions to one of their workshops. A: Cackett, Burns Dick & McKellar (F), 21, Ellison-pl., Newcastle.—UDC decided to build three-storey blocks of flats in cleared area at Carr-st. S: R. C. Bestow.

Hindley.—UDC approved plans for additional classroom block adjoining Church Hall at Market-st. for St. Benedicts church and for conversion of Rex cinema into ballroom for Manaco Ballrooms, Ltd.

Huddersfield.—TC to prepare plans for bus station in Northgate and Southgate area.

Keighley.—Keighley Lifts, Ltd., propose erection of new factory, office premises and canteen at Eastwood.

London (British Transport Commission).—British Transport Docks to spend £600,000 on modernisation of quay cranage and ancillary work at Immingham Dock, and over £250,000 on improving import facilities for iron ore traffic at Barrow Docks.

Mansfield.—Samuel Smith Old Brewery (Tadcaster), Ltd., propose erection of new licensed premises at Clipstone-rd. East. A: David B. Jenkinson & Son (F/A), Imperial-bldgs., Rotherham.—BC approved plans, 12 houses and 28 bungalows, off Southwell-rd. East for W. Lee, Ltd.

Newcastle-on-Tyne.—City C is being asked to give priority to £275,000 scheme for construction of extensions to Harehills-ave. to link up west end of city with Gosforth. City E: P. Parr, Town Hall, Newcastle-on-Tyne.

Preston.—TC proposes extensions at Harris College of Further Education, £504,300 est.—EC proposes erection of two new sec. schools.

Redcar.—TC plans 224 houses on land adjoining Redcar-la. Plans by Boro' E: K. W. Ash.

Redcar.—Vaux and Associated Breweries, Ltd., Sunderland, have been granted licence for building of hotel on Middlesbrough/Redcar trunk road. Staff A: J. Pearson Rudd (F).

Richmond (Yorks).—RDC has decided to build six houses and six bungalows at Brompton. S: J. T. Powell.

Sheffield.—Regional Hospital Board appointed Miss J. Ledeboer (F), of Booth, Ledeboer & Pinckheard (F/F), 17, Masons Yard, SW1, as A for erection of social therapy centre at Coppice hospital, Nottingham.

Slough.—Layout plans for new hospital of 300 beds at Wexham Park approved by North-West Metropolitan Regional Hospital Bd., £1,535,000 est. A: Powell & Moya (F/F), 36, Gt. Smith-st., SW1, in association with R. Llewelyn Davies (F), Nuffield Foundation, Nuffield Lodge, Regent's Park, NW1.

Solihull.—TC proposes erection of aged persons' bungalows at Jobs Close, Knowle.

Southampton.—Mental Health Com. of SW Regional Hospital Bd. propose new kitchen and stores at Coldeast hospital, Sarisbury Green, £78,597 and £42,089 respectively. Regional A: R. F. M. Mellor (F), 76, Wimpole-st., W1.

Southport.—BC to prepare plans for 40 houses between Liverpool-rd. and Sandy Brook.

Southwell, Notts.—RDC proposes 20 houses and six bungalows off Eakring-rd.

Stafford.—TC proposes erection of 50 houses.

Stalybridge.—TC to prepare plans for new 'bus station on Angel Inn site, between Waterloo-rd. and Market-st.

Stockport.—Manchester Regional Hospital Board proposes new physiotherapy and occupational therapy department at Stepping Hill Hospital, £17,000 est., and new chest clinic, £33,000 est., and adaptation of Offerton boys' sch. as mental deficiency hospital, £18,000 est.—TC to sell site on Canal Bridge Farm estate to Bell & Co., Ltd., for new public-house.

Stockton.—TC to press postal authorities to proceed with building of new head post office on cleared site at High-st.—TC has approved allocation of four sites on housing estates to Northumberland and Durham Brewers' Association for public-houses.—TC to give further consideration to scheme to build transport depot, £250,000 est. Boro' A.

Stockton - on - Tees. — Schweppes, Ltd., Schweppes-hse., Connaught-pl., W2, to erect warehouse, offices, etc., 150 ft. by 55 ft., at Dog Hill Farm estate.

Stockton-on-Tees.—TC to negotiate price with Moore & Cartwright, Ltd., High-st., Nor-

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ton, Stockton, for another 87 houses at Hardwick estate. Boro' A: T. C. Hartley, 28, The Square, Stockton.

Stokesley.—Head, Wrightson & Co., Ltd., ironfounders, etc., Thornaby-on-Tees, to convert The Friarage, Yarm, into drawing offices, etc. (plans approved).

Stretford.—Plans submitted to BC:—Flour silos at Skerton-rd. for W. J. Brookes & Sons, Ltd.; petrol filling and service station and motor car showrooms on site of 86, Edge-la. for S. R. Mayhew; extensions to existing building to form hotel at 'Beech House,' 77, Edge-la. for Mortgage Investments, Ltd.; additional storey for use as offices, canteen, etc., at Mosley-rd. for Charles Corry (Metals), Ltd.; two-storey extension to premises at Chester-rd. for Lookers, Ltd.; extensions to food warehouse at 19, Stanley-rd. for Danish Bacon Co., Ltd.; rebuilding of 'D' storage warehouse at Trafford Park-rd. for Trafford Park Estates, Ltd.; electronic test sheds at Westinghouse-rd. for Metro-Vickers, Ltd.; workshop and showroom at Third-ave. for W. & T. Avery, Ltd.

Sutton Coldfield.—M of W propose erection of new telephone exchange adjacent to Ley Hill sports ground.—BC to negotiate tenders with Henry Boot & Sons, Ltd., for 17 bungalows and 13 houses at rear of Cofield-rd. and St. Michaels-rd. with A. E. Jones (Builders), Ltd., for four houses and eight bungalows on site off Reddicap Hill and with Davis & Son (Builders), Ltd., 87, Sheffield-rd., Birmingham, for six flats at Green-la.

Thornaby-on-Tees.—Head, Wrightson & Co., Ltd., to erect heavy plate shop at their Teesdale Ironworks.

Walsall.—TC approved plans for new shopping arcade at Park-st. for City and Town Buildings, Ltd., Bournemouth.

Wirksworth.—Derbyshire CC proposes new fire station at Harrison-dr.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Barrow-in-Furness.—Reconstruction of Abbey swimming baths, Phase 2, for TC. *John Leck & Sons (Barrow), Ltd., Ironworks-rd., Barrow. £65,609.

Barry.—20 shops with maisonettes over at Winston-rd., Colcot estate for BC. Boro' E&S: John Proctor. *W. E. Chivers & Sons, Ltd., Mill-la., Western-ave., Llandaff, Cardiff.

Bedford.—32 flats at The Fairway for BC. Boro' S: F. W. Dawkes, AMICE, MIMunE, AMTPI. ‡W. J. Bushby, Ltd., £58,283.

Bedford.—32 flats at Putnoe estate for BC. Boro' E&S: F. W. Dawkes, BSc, AMICE, MIMunE, AMTPI. *Wm. J. Bushby, Ltd., 30, High-st., Kempston, Beds., £58,283.

Birmingham.—Alterations and extensions to premises at Ludgate Hill, for D. Foulkes, Ltd. *T. Elvins & Sons, Ltd., Soho Hill, Handsworth, Birmingham.

Bolton.—Erection of 3-storey block of 48 flats at Kay-st., for TC. *Direct labour. £71,500.

Bootle.—106 dwellings, Park-la. estate, Netherton, for CBC. E: D. T. Bradshaw, AMICE. *Lloyd & Cross, Ltd., Port Causeway, Bromborough.

Cardiff.—Foundation work, drainage and r.c. raft at new hatchery, Wern Fawr Farm, Wern Fawr-la., St. Mellons, Cardiff, for Thornber Bros., Ltd., Mytholmroyd, Halifax, Yorks. *Davies, Middleton & Davies, Ltd., Cardiff.

Carlisle.—Special school for ESN children, for EC. City E: L. J. A. Stow, 18, Fisher-st. *H. Cartner & Son, Knowe-terr., Carlisle. £39,106.

Carshalton.—16 bungalows, etc., for aged people at Nightingale-rd. for UDC. E&S: C. Needham, AMICE, AMIStructE, MIMunE. QS: E. C. Harris & Ptnrs. *Woodcock Bros. (Wimbledon), Ltd., 1, DeBurgh-rd., Wimbledon, SW19, £36,992.

Chorley.—Erection of dwellings at Cowling Brow site, for TC. 46, *J. & H. Bullough (Contractors), Ltd., Chorley. 43, *J. W. Lee, Ltd., Chorley.

Coventry.—Extensions to premises at Burnsall-rd., for H. Burbridge & Son, Ltd. *H. Clarke & Sons, Ltd., 48, Coronation-rd., Coventry.

Cowbridge, Glam.—New transmitting station at St. Hilary, for Independent Television Authority. A: E. R. Collister & Associates, 70, Victoria-st., SW1. *Davies, Middleton & Davies, Ltd., Phœnix Works, Caerphilly-rd., Cardiff. £30,000 approx.

Cumberland.—New county sec. sch. at Dalston, for CC. County A: J. H. Haughan (F), Portland-sq., Carlisle. *R. E. Reay & Son, Ltd., Penrith. £150,000.

Darlington.—48 houses at Skerne Park estate, for TC. Boro' A: E. A. Tornbohm. *R. Blackett & Sons, 63, Bondgate, Darlington. £68,295.

Dudley.—90 flats and 60 maisonettes at Old Park Farm estate, for BC. *Wates, Ltd., London. £312,019.—Extensions at Dudley grammar sch., for EC. *A. J. Crump & Sons, Ltd., Aston-rd., Dudley. £18,595.

Easington.—New operating theatre suite at Thorpe maternity hospital, for Newcastle Regional Hospital Board, Benfield-rd., Newcastle-on-Tyne. P. H. Knighton, MBE (A), Board's Chief A. Constg. engr.: F. M. Ownett, Fawcett-st., Sunderland. *Milton Swales, Ltd., Imeary-st., South Shields. £11,527.

Eccles.—72 flats and maisonettes at Barton-la. for BC. A: Frank Bradley (F). Boro' E&S: D. C. Kean, MIMunE, ARICS. R. J. Barton & Sons, Ltd.: J. Gerrard & Sons, Ltd.; Roy & Partners, Ltd.; Wm. Townson & Sons, Ltd.; Bower & Moffatt, Ltd.; Henry Boot & Sons, Ltd.; ‡G. & J. Seddon, Ltd., Coronation-bldgs., Walkden, nr. Manchester, £111,734 (subject to approval of MH&LG).

Eccles.—12 flats at Parrin-la. for BC. Boro' E&S: D. C. Kean, MIMunE, ARICS. C. Topham & Sons, Ltd.; G. A. Lomas & Co., Ltd.; A. Locke (1940), Ltd.; W. Snape & Sons, Ltd.; W. Britain & Son, Ltd.; W. Fearnley & Sons, Ltd.; Wm. Martin; ‡P. Bracegirdle, Ltd., Irlam, £19,220 (subject to approval of MH&LG).

Eccles.—12 flats at Parrin-la., for TC. *P. Bracegirdle, Ltd., Irlam. £19,220. 40 flats and 38 maisonettes at Barton-la., *G. & J. Seddon, Ltd., Little Hulton, nr. Bolton. £111,733.

Guildford.—38 dwellings at The Rough housing site, West Horsley, for RDC. E&S: J. W. Snape, MIMunE, MRSI. QS: J. McBain & Ptnrs., Woking:—Loyds (Builders), Ltd., £97,546; C. F. Cull, Ltd., £87,129; T. Connolly, Ltd., £86,180; Gorham (Contractors), Ltd., £85,250; J. McNulty, Ltd., £85,202; A. J. Newark, £81,912; Carlton Contractors, Ltd., £80,861; H. J. Titcomb & Sons, Ltd., £80,861; Oliver R. Croudace, Ltd., £78,200; Orchard & Peer (London), Ltd., £77,600; R. & D. Barton, Ltd., £75,812; E. Clarke & Sons (Addlestone), Ltd., £74,921; *Lewood (Ditton), Ltd., Savoy Building, Cobham, £73,922.

Hambledon.—Works for RDC. E&S: R. F. Caple, AMInstCE.—18 bungalows at Shamley Green. *Holt Bros. (Godalming), Ltd., £23,419. —38 houses at Shamley Green. *Orchard & Peer, Ltd., £69,715.

Hampstead.—Five dwellings at Upper Park-rd. (revised scheme, in place of abandoned scheme for six dwellings). ‡Frederick Mark, Ltd., 36-38, Bell-st., NW1, £14,204 (subject to loan and all necessary sanctions).

Hatfield.—48 houses at Dellsome-la., Welham Green, for RDC. A: J. H. Parker (A), 82, Great North-rd. QS: Taylor and Smith. Roger Malcolm, Ltd., £83,484; Carlton Contractors, £82,855; W. S. Wilson, £81,166; T & B (St. Albans), Ltd., £78,756; Hale Construction, £78,454; Davies & Rentowl, £78,000; Alfred Robinson, Ltd., £77,844; Catchpole, Ltd., £77,627; Charles B. Lamb, £76,884; Davey Estates, Ltd., £76,445; Galladay Estates, £76,126; *T. F. Nash Contractors, Ltd., Uxbridge-rd., Hayes, Middx., £75,782.

Keighley.—42 flats and 18 bungalows at Braithwaite estate, 4 flats at Guard House estate, 8 bungalows at Broster-ave. and 12 flats at Woodhouse estate, for TC. *E. Turner, Ltd., Bradford-st., Keighley. £77,391.

Lambeth.—Rebuilding Minet Library, Knatchbull-rd., SE5. A: Gold & Aldridge (F/F), 42, Church-st., Baldock, Herts. *Frank R. Freeman, Ltd., 13-14, Chapel-st. NW1.

Lancs.—Longridge county sec. sch., for CC. *Middleton & Co., Ltd., Bank-st. Sidings, Blackpool. £95,013.

Leeds.—New Arts Block at University, for Senate. ‡Higgs & Hill, Ltd., Leeds.

Liverpool.—First instalment of fire station at Conleach-rd. and North Parade, Speke, for TC. *J. B. Johnson & Co., Ltd., 17, Overton-st., Liverpool. £29,891.

¶London (Air Ministry).—New works contracts to value of £500 or over for week ended April 12:—*Artificers work*: Wellesbourne, Mountford, Warwicks, Bosworth & Wakeford, Ltd., New-st., Daventry, Northants; Rye, Sussex, Walter Llewellyn & Son, Ltd., 3, Cornfield-terr., Eastbourne. *Extension of runway*: Wethersfield, Essex, George Wimpey & Co., Ltd., Hammersmith-grove, W6. *Building work*: Lyneham, Wilts, A. J. Dunning & Sons (Weyhill), Ltd., Weyhill, nr. Andover, Hants; Abingdon, Berks, A. C. Carter (Oxford), Ltd., Green-rd., Headington, Oxford.

London (British Railways).—New running shed roof and improved maintenance facilities at Doncaster Carr motive power depot. Ch. E: A. K. Terris BSc(E), MICE. *George Simpson (London), Ltd. *Steelwork*: C & S Construction Co., Ltd., Isleworth, Middx.

London (British Railways).—Reconstruction of roofs over platforms 4, 5 and 6 at Doncaster station, Eastern Region. Ch. Civil Engr.: A. K. Terris, BSc (E), MICE. Genl. contr.: *Wm. Proctor & Sons, Ltd., Sheffield. Steelwork: California Engineering Co., Ltd., Bury.

London (British Railways).—Recent contracts placed by North-Eastern Region:—Dinsdale: Crane gantry and hoist runways, Wright Anderson & Co., Ltd., Gateshead.—Sherburn Colliery: Bridge No. 22 reconstruction and widening, Tarslag, Ltd., Stockton-onTees.—Milford South: New signal box, Leonard Garbutt, Ltd., Aberford.—York old station buildings: Additional accommodation for signal engineer, T. Belt & Son, Ltd., York.

London (British Transport Commission).—Fuelling facilities for diesel rail cars at Barry Island. *Davies, Middleton & Davies, Ltd., Caerphilly-rd., Cardiff. £15,000.

Mossley.—70 dwellings at Micklehurst estate, for BC. *James Hartley & Sons, Ltd., Middleton Junction.

North Riding.—New Eston central county mod. sch., for EC. A: Richard Sheppard & Ptnrs. (F/A/A), Southampton-pl., WC1. QS: David Belfield & Everest, 9, Ashley-pl., SW1. *J. W. Henderson & Co., Church-row, Stockton-on-Tees. £114,971.

Nuneaton.—64 flats, Coton-rd./Edward-st., for BC. A: F. Gibberd (F), 8, Percy-st., W1. QS: O. A. Wainwright, E. Harris & Son (Coventry), Ltd., £124,912; C. Bryant & Son, Ltd., £121,686; Drury & Co., Ltd., £121,100; W. J. Simms, Sons & Cooke, Ltd., £120,372; James Miller & Ptnrs., Ltd., £118,674; G. E. & W. Wincott, Ltd., £117,754; H. Dare &

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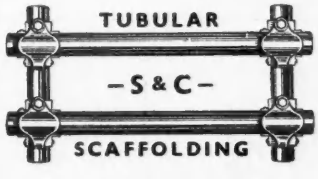

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Oldham.—New prim. sch. at Alt estate, for EC. *Whitworth Whittaker & Co., Ltd., Rochdale-rd., Oldham. £52,300.

Pontyclun, Glam.—Additions to factory, for Bronze Smelters, Ltd., Pontyclun. Plans by C. H. Dobbie; BSc, MICE, constg. engr., 12, Cathedral-rd., Cardiff. *Davies, Middleton & Davies, Ltd., Phœnix Works, Caerphilly-rd., Cardiff.

Rhondda.—New storage building, Cymmer-rd., Porth, for Jacob Beatus, Ltd., Porth. *Davies, Middleton & Davies, Ltd.—Redecorations and alterations to milk factory at Porth, for Jo. James & Sons (Rhondda), Ltd., Cymmer-rd., Porth. *Davies, Middleton & Davies, Ltd., Cardiff.

Rotherham.—26 houses at Kimberworth Park estate, for BC. *Beeden, Ltd., Thrybergh, Rotherham. £34,741.—28 dwellings and 14 garages at Kimberworth Park estate. *C. Earnshaw (Rotherham), Ltd., 35, Coke-la., Rotherham. £38,482.

Salford.—Further block of 8 shops, 8 maisonetts and 8 flats at Rigby-st., for TC. *Unit Construction Co., Ltd., Speke Boulevard, Liverpool. £48,820.

Scarborough.—RC church at Eastfield. A: F. F. Johnson (F), 16, High-st., Bridlington. *A. W. Sinclair & Sons, 80, Commercial-st., Scarborough.

Sheffield.—Following, for Regional Hospital Board:—Phase 1 of reorganisation of City General Hospital, Sheffield. *F. Haslam, Ltd., 5, Regent-ter., Doncaster.—Central kitchen unit at Victoria hospital, Mansfield. *Kirk Bros. (Mansfield), Ltd., 112, George-st., Mansfield. £27,658.—Ophthalmic theatre unit at Derbyshire Royal Infirmary, Derby *W. Ford & Sons (Contractors), Ltd., Summer Hill, Becket Well-la., Derby. £20,893.—Nurses' dining-room at Moorgate general hospital, Rotherham. *Beeden, Ltd., Thrybergh. £16,711.

Stokesley.—10 houses at Great Ayton, for RDC. *Spence Bros., Camp Site, Great Ayton. £14,885.

Swansea.—New Bonymaen infants' sch., for CBC. Boro' A: H. T. Wykes (F), AMPTI, The Guildhall, Swansea, Glam. *Davies, Middleton & Davies, Ltd., Phœnix Works, Caerphilly-rd., Cardiff. £100,000.

Tynemouth.—New factory on four-acre site off Wallsend-rd., N. Shields, for Stella Building Products, Ltd., Tudor-ave., N. Shields. A: M. Gatoff (A), 51, Grainger-st., Newcastle-on-Tyne. *Coseley Civil Engineering Co., Ltd., Wolverhampton (work commenced).

Wellingborough.—12 flats, six houses and four bungalows, Box Hedge-pl., and four flats, Dolben-sq., Finedon, for UDC. E&S: R. Kilby. *F. & R. Windsor, Ltd., Rushden. £36,214.

Westminster.—Reconstruction of administration unit at St. George's Hospital, Hyde Park Corner, SW1. A: W. H. Watkins, Gray & Ptnrs. (F/F), 57, Catherine-pl., Palace-st., SW1. *Frank R. Freeman, Ltd., 13-14, Chapel-st., NW1.

Weston-super-Mare.—Eight shops with six maisonettes and two flats, etc., Oldmixon Coronation housing estates. A to Ccl.: Reginald H. Gallannaugh (L), 54, Queen Anne-st., W1. QS: Allsebrook, Horsley & Wood, Bristol. W. J. Pople & Sons, Ltd., £29,906; Roberts Bros. (Contractors), Ltd., £28,747; James Moseley, Ltd., £28,483; Benson Bros. (Bristol), Ltd., £28,261; S. W. Foster, Ltd., £27,536; *Holtby & Dudman, Ltd., Weston-super-Mare, £26,966.

Wingerworth, Derbys. — New laboratory block, canteen, baths and medical inspection block at Avenue Carbonisation Plant, for NCB. *Rostance (Builders), Ltd., Nottingham.

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